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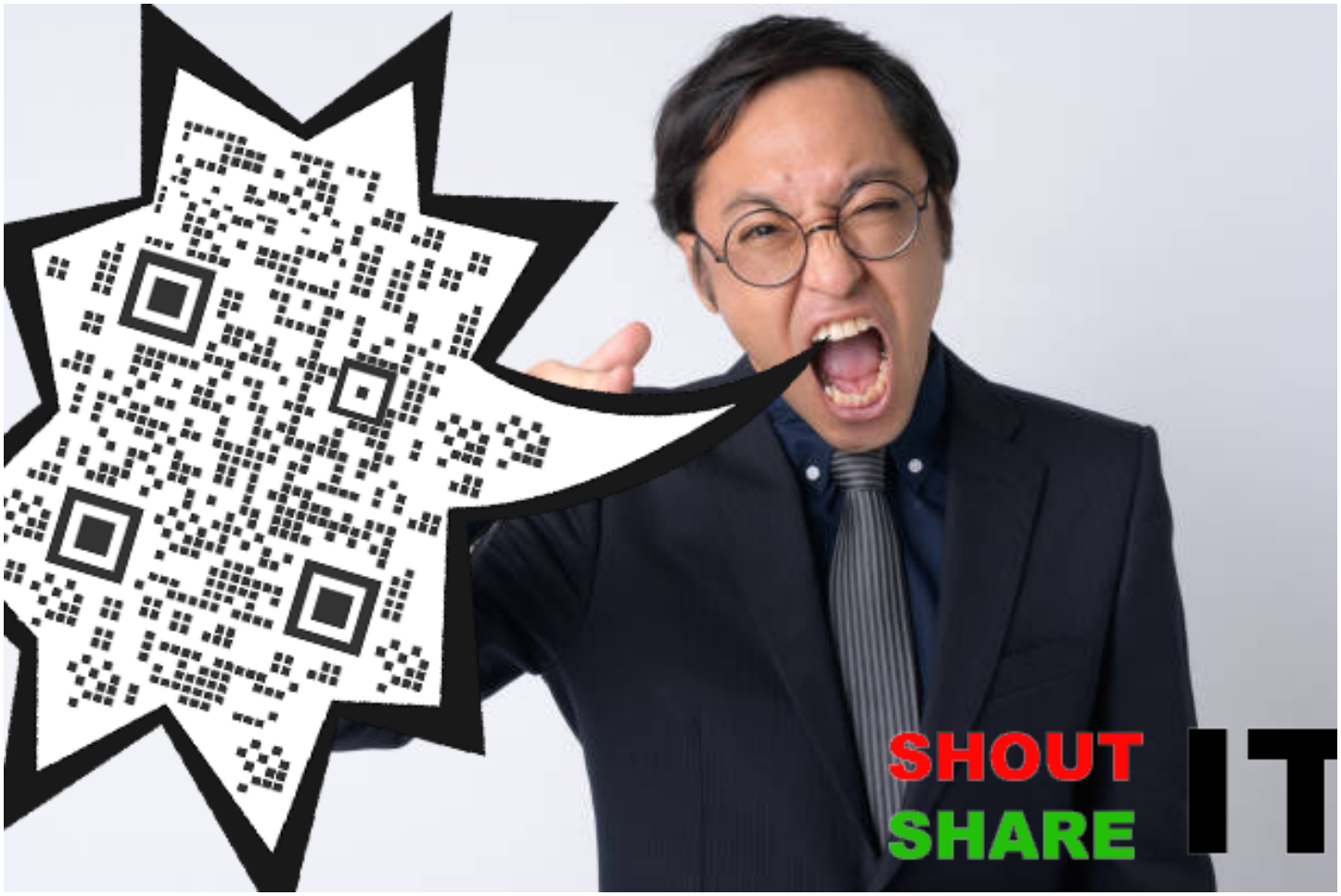
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Ficus-feeding psyllids (Homoptera), with special reference to the Homotomidae

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Synopsis. The associations between *Ficus* and various groups of insects are briefly discussed. That between *Ficus* and the Psylloidea, particularly the family Homotomidae, is considered in more detail. It is concluded that, at the present level of our understanding of the phylogeny of *Ficus* and that of agaonine wasps, drosophilid flies, nymphalid butterflies and jumping plantlice, stepwise coevolution cannot be inferred in any of these associations.

The systematics of the psyllid family Homotomidae is reviewed. The family is diagnosed and considered as the sister-group of the Malvales-feeding family Carsidaridae. The 10 genera comprising the Homotomidae are diagnosed; a key is provided for their identification and a cladogram is offered, based on an analysis of 35 characters. Full synonymy and hostplant data, where known, are provided for the 72 nominal species recognised; where practical, keys to species are given. Two new genera and 15 new species are described; two family-group names, one genus-group name and one species-group name are synonymised.

INTRODUCTION

'The combination of botanical and entomological research has now put *Ficus* in the front rank of evolutionary and phylogenetic studies'

E. J. H. Corner (1985*a*)

The Moraceae is a pantropical family of dicotyledonous angiosperms containing more than 1400 species in 53 genera. Most of the genera contain few species but the diverse genus *Ficus* includes more than half of the known moraceous species. The family is most closely related to the Urticaceae (Berg, 1977), and Thorne (1983) even regarded it as a subgroup of the latter.

There appears to be a consensus of opinion that the Moraceae is of Gondwanan origin. Raven & Axelrod (1974: 592) considered the family old enough for direct dispersal between Africa and South America, and Gentry (1982: 569) classed it as a Gondwanan element. However, there seems to be considerable argument concerning the palaeogeographical origin of the genus *Ficus*. Croizat (1968) argued for an early evolution in Gondwana, while Corner (1985*b*) forcefully maintained his long-held theory of a Laurasian ancestry for the genus. Whatever the merits of these arguments there is agreement that the present-day *Ficus*, with its closed inflorescence or syconium, arose from an ancestor with an open inflorescence in the mid Cretaceous Period, about 100 million years ago (Galil, 1977; Murray, 1985; Bouček, 1988).

The symbiotic association between *Ficus* (figs) and their fig wasp pollinators (Agaoninae) is well-documented (Wiebes, 1979; 1986 for reviews), and Jermy (1984) suggested that this association may be one of the very few true examples of coevolution between plants and insects. Pollinating fig wasps are species-specific to their fig hosts and there is a reasonable correlation between fig wasp generic or species-group classification and the subsections and series classification (Corner, 1965) of *Ficus*. In fact Ramirez (1977, 1980) suggested modifications to Corner's arrangement of *Ficus* species, based on the specificity and morphology of their pollinating wasps. Wiebes (1982) further compared classifications of Agaoninae and *Ficus* (from Ramirez, 1980) and concluded that there is no correlation, at a higher level than that noted above, between the two classifications. Corner (1985a) reviewed the modifications suggested by Ramirez and Wiebes but rejected them, for the large part, in favour of his original classification. Miller (1987) briefly reviewed the case and considered that more rigorous cladograms were required for both groups of organisms before stepwise coevolution could be inferred.

Hill (1967) listed a further 46 genera of non-agaonine (i.e. non-pollinators sensu Bouček, 1988) fig wasps, known to be associated with fig syconia, in other subfamilies of the Agaonidae and the families Eurytomidae, Ormyridae, Eulophidae and Pteromalidae. The roles played by these wasps appear to be varied but have been little studied. Some are phytophagous, others are hyperparasites, and there is some degree of fig specificity.

Lachaise et al. (1982) reported on the association between fig syconia and two groups of drosophilid flies, *Lissocephala* and the *Drosophila fima* species-group, in Africa. *Lissocephala* larvae develop during the floral period of the syconium and each species of fig studied harboured a particular combination of *Lissocephala* species; different species of figs possibly having some *Lissocephala* species in common. *Drosophila fima* species-group larvae develop in the postsexual phase of the syconium and there appeared to be no fig species preference in this group. Lachaise et al. (1982) postulated that the speciation of *Lissocephala* was a by-product of the coevolution of figs and their pollinating wasps.

Apart from those insects associated with fig syconia there are other groups of insects known to feed on *Ficus* species. Two such groups worthy of mention are the larvae of nymphalid butterflies, and the jumping plantlice or Psylloidea (Homoptera). Ackery (1988 and pers. comm.) has reviewed the hostplants of nymphalid larvae and recognised some Moraceae-feeding 'themes': Marpesiine larvae have specialised on Moraceae genera, including *Ficus*; the Limenitine genus *Pseudoneptis* feeds on *Antiaris* and *Ficus*; and the genus *Euploea* (Danainae) shows a trend towards *Ficus*-feeding but plants in the families Apocynaceae, Rubiaceae, Ulmaceae, Flacourtiaceae, and Convolvulaceae are also known hosts.

The Psylloidea (jumping plantlice) comprise a group of small, phloem-feeding sternorrhynchous bugs. Individual psyllid species show a high degree of hostplant specificity, particularly during the larval stages, and related species tend to develop on related species or groups of dicotyledonous angiosperms. Several groups of psyllids are known to utilise moraceous hostplants and one family in particular, the Homotomidae, is almost exclusively *Ficus*-feeding.

The objectives of this paper are to review the known data on Moraceae-feeding in the Psylloidea; to postulate a phylogeny for the genera of the family Homotomidae, for future comparison with a cladogram of the subgroups of *Ficus*, should this ever be produced; and to review the taxonomy of the species in the family.

MATERIAL, METHODS AND TERMINOLOGY

Most of the material studied is deposited in the British Museum (Natural History) (BMNH), with supplementary specimens from the Bernice P. Bishop Museum, Honolulu (BPBM); Muséum d'Histoire Naturelle, Geneva (MHNG); Muséum National d'Histoire Naturelle, Paris (MNHN);

Musée Royal de l'Afrique Centrale, Tervuren (MRAC); Stanford University Natural History Museum, California (SUNHM); and the National Museum of Natural History, Washington (USNM). Type material is deposited in BMNH; BPBM; MHNG; MNHN; MRAC; SUNHM; USNM; Australian National Insect Collection, Canberra (ANIC); Beijing Agricultural University Insect Collection, China (BAUIC); Entomological Institute, Hokkaido University, Sapporo (EIHU); Forest Research Institute, Dehra Dun, India (FRI); Institut für Pflanzenschutzforschung, Eberswalde (IPE); Instytut Zoologiczny, Polish Academy of Sciences, Warsaw (IZPAN); National Chung Hsing University, Taiwan (NCHU); National Collection of Insects, Plant Protection Research Institute, Pretoria (NCI); and the Zoological Survey of India, Calcutta (ZSI).

All measurements are quoted in millimetres; most were taken from slide-mounted material but overall size was taken from the anterior margin of the head to the tip of the forewing of dry-mounted material in lateral view. Other reference points from which measurements of various structures were taken are given in Hollis (1976, 1984).

Apart from the head illustrations, all figures were drawn from slide-mounted material. The inner surface of the right paramere is shown. Structural terminology follows Vondráček (1957) and Hollis (1984, 1987).

Acknowledgements. We are grateful to the following colleagues for providing loans and gifts of material: Keith Arakaki and the late Wayne Gagné (BPBM); Daniel Burckhardt (MHNG); J. Etienne, formerly of Institut Sénégalaise Recherches Agricoles, Ziguinchor; and Douglass Miller and Miss Louise Russell, United States Department of Agriculture, Systematic Entomology Laboratory, Beltsville, Maryland.

MORACEAE-FEEDING PSYLLIDS

Table 1 summarises the available data on psyllid genera associated with moraceous hosts. The genus *Paurocephala* has 25 species in the Old World tropics, with free-living larvae. There is one species on *Artocarpus*, one on *Morus* and three on *Ficus*. Most of the other species live on hosts in the Malvales (Tiliaceae, Malvaceae and Sterculiaceae) but there are a few species on Clusiaceae (Theales) and Connariaceae (Rutales). The South American species are on Melastomaceae but these are probably not congeneric with the Old World species. The genus is most closely related to *Haplaphalara* and *Diclidophlebia* which also have hosts in the Malvales.

Phytolyma is an African genus of four species (Hollis, 1973), three on *Milicia* and one on *Morus*. The larvae are gall-forming on leaves and petioles. Its relationships are not clear but White & Hodkinson (1985) placed the genus as the sister-group of the rest of the Aphalarinae.

Anomoneura is a monobasic Asian Palaearctic genus living on *Morus*; it may be related to the legume-feeding genus *Epipsylla* (White & Hodkinson, 1985).

The triozid genus *Pauropsylla* has 22 species in the Old World tropics and subtropics and all confirmed hosts are *Ficus* spp. The larvae usually form pit galls on the host leaves. *Ceropsylla fulvida* is an Indian species recorded by Mathur (1975) on *Ficus microcarpa* [as *macrocarpa*] and *F. rumphii*. The species is not congeneric with American *Ceropsylla* which are found on *Ocotea* (*Lauraceae*) and *Sideroxylon* (Ebenaceae). *Trioza* is a large and probably paraphyletic genus of some 600 species (Hollis, 1984). Three species are known to occur on *Ficus* species. *T. buxtoni* is a Middle Eastern species on *F. carica* and the larvae cause severe leaf distortion; *T. ficicola* is a South African species on *Ficus* sp.; *T. brevigena* occurs on *Ficus* sp. in N. India and its larvae cause leaf-margin rolls.

The homotomid genus *Triozamia* is an interesting example of the degree to which psyllids are host specific (Hollis, 1984). The three known species appear to maintain separate identities on the three recognised African varieties of *Antiaris toxicaria welwitschii* (cf. Berg, 1978), i.e. *T. lamborni* on var. *africana*, *T. vondraceki* on var. *welwitschii* and *T. usambarensis* on var. *usambarensis*.

Table 2 summarises the available data on psyllids having *Ficus* spp. as hostplants. Using Corner's (1965) infrageneric arrangement of *Ficus* some patterns can be discerned. *Pauropsylla* occurs mainly on subgenus *Sycomorus*, with a few species on section *Sycidium* of subgenus *Ficus*. The original records of *P. ficicola* and *P. globuli* on *Ficus hookeriana* (Kieffer, 1905; as *F. hookeri*) are regarded as dubious; *P. ficicola* adults and larvae have been collected recently from *F. auriculata* in N. India (BMNH data). *Paurocephala* species are restricted to subgenus *Ficus*.

Homotomid species occur mainly on the strangler and banyan subgenus *Urostigma*, with a few species on subgenus *Ficus* and one genus, *Dynopsylla*, whose larvae are gall-forming, on *F. nervosa* of subgenus *Pharmacosycea*. Of the groups that

Table 1 Genera of Moraceae exploited as hostplants by genera of Psylloidea.

Genera of Moraceae	Genera of Psylloidea						
	Psyllidae			Triozidae	Homotomidae		
	Paurocephalinae	Aphalarinae	Anomoneurinae		Dynopsyllinae	Macrohomotominae	Homotominae
Antiaris					*Triozamia*		
Artocarpus	*Paurocephala*						
Ficus	*Paurocephala*			*Pauropsylla* *Ceropsylla* *Trioza*	*?Diceraopsylla* *Dynopsylla*	*Mycopsylla* *Macrohomotoma* *Pseudoeriopsylla*	*Synoza* *Homotoma*
Milicia (= African *Chlorophora*)		*Phytolyma*					
Morus	*Paurocephala*	*Phytolyma*	*Anomoneura*				

occur on subgenus *Urostigma*, the African genus *Pseudoeriopsylla* is restricted to section *Galoglychia* while its sister-group, the Oriental genus *Macrohomotoma*, is on section *Conosycea*. *Mycopsylla* is less restricted with the Australasian species on section *Malvanthera* and the Indian species recorded from sections *Urostigma* and *Conosycea*. *Homotoma* species have an even broader spectrum of *Ficus* hosts in sections *Urostigma*, *Conosycea* and *Galoglychia* of subgenus *Urostigma*, and sections *Ficus* and *Rhizocladus* of subgenus *Ficus*. The record of *Diceraopsylla* on *Ficus elastica* (subgenus *Urostigma*, section *Stilpnophyllum*) is doubtful (see p. 142).

Corner's infrageneric conspectus of *Ficus* is, to some extent, based on plesiomorphies and does not indicate phylogenetic relationships (Wiebes, 1979). Ramirez (1980: fig. 1) produced a 'cladogram' for *Ficus*, based on 'fifty-four morphological characters and a few physiological characters'. Unfortunately, few of these characters were discussed and the resulting branching diagram cannot be assessed critically. However, Table 3 shows a slightly modified version of Ramirez' cladogram of *Ficus* sections, and the homotomid genera that are associated with these sections. Clearly stepwise coevolution cannot be inferred from these data.

The cladogram of homotomid genera (Fig. 1) is presented so that, when a more rigorous phylogeny of *Ficus* is produced and more reliable hostplant data for the psyllids are gathered, the case may be reconsidered.

HOMOTOMIDAE Heslop-Harrison

Homotomini Heslop-Harrison, 1958: 578; Loginova, 1964*b*: 54. Type genus: *Homotoma* Guérin-Méneville.

Homotominae Heslop-Harrison; Klimaszewski, 1964: 91; Bekker-Migdisova, 1973: 101.

Homotomidae Heslop-Harrison; White & Hodkinson, 1985: 272; Hollis, 1987: 90. Brown & Hodkinson, 1988: 179.

Carsidarinae Crawford; Yang, 1984: 168, in part.

Diagnosis. A pair of strong tubercles present on metapostnotum; ventral sense organs of hind femur in basal position, proximal organ offset from distal pair; ♂ proctiger bipartite (not in *Synoza*); ♂ subgenital plate without laterodorsal appendages; *rs–m* crossvein absent from forewing.

Hostplants. Moraceae (*Antiaris* and *Ficus*).

Discussion. As diagnosed here the family contains the following genera: *Diceraopsylla*, *Dynopsylla*, *Austrodynopsylla*, *Triozamia*, *Afrodynopsylla*, *Mycopsylla*, *Macrohomotoma*, *Pseudoeriopsylla*, *Synoza* and *Homotoma*. *Diceraopsylla* is reassigned from the Aphalaridae, and *Triozamia* is transferred from the Triozidae. *Austrodynopsylla* and *Afrodynopsylla* are described as new below.

The group was erected by Heslop-Harrison as a tribe of his polyphyletic subfamily Ciriacreminae, to contain the genera *Homotoma*, *Psausia*, *Labobrachia*, *Metapsausia*, *Mycopsylla*, *Sphingocladia*, *Synoza*, *Crawfordella* and *Dynopsylla*. He placed *Macrohomotoma* in the Phacopteronini and *Diceraopsylla* in the Carsidarini. Of these original genera *Psausia* was synonymised with *Homotoma* by Kuwayama (1931); *Labobrachia* and *Metapsausia* were inferred as synonyms of *Homotoma* by Miyatake (1975); *Sphingocladia* and *Crawfordella* have been, most recently, synonymised with *Dynopsylla* by Crawford (1924) and Yang (1984) respectively. *Macrohomotoma* and *Diceraopsylla* were transferred to the Homotominae by Bekker-Migdisova (1973) and *Diceraopsylla* was erroneously transferred to the Aphalaridae by Hollis (1984).

Loginova (1964*b*) and Klimaszewski (1964) both noted the polyphyletic nature of Heslop-Harrison's Ciriacreminae and regarded homotomids as a subgroup of the Carsidaridae, as did Bekker-Migdisova (1973) but her concept of the latter included several non-carsidarid groups (White & Hodkinson, 1985; Hollis, 1987). White & Hodkinson (1985) regarded homotomids as a distinct family containing the genera *Homotoma*, *Synoza*, *Mycopsylla*, *Macrohomotoma*, *Pseudoeriopsylla*, and probably *Dynopsylla* and *Sphingocladia*. They diagnosed the group on the following 'derived' characters (White & Hodkinson, 1985: 239, clade 6).

1. Adult antenna with rhinaria absent from segments 3, 5 and 7.
2. Larva with dorsal surface of thorax with distinct sclerites.
3. Larva broader than long.
4. Antenna of larva short, narrowed evenly to apex.

However, for a number of reasons this diagnosis is not valid. Character 1 does not occur in many members of the Dynopsyllinae, but is a widespread condition in the Psylloidea; character 2 is a primitive condition, occurring in other families; character 3 does not occur in *Synoza* or in

Table 2 Species of *Ficus* (arranged after Corner, 1965) utilised as hostplants by species of Psylloidea. * and § are the same records.

Ficus infrageneric groups (after Corner, 1965)						Psylloidea species
Subgenus	Section	Subsection	Series	Subseries	Species	
Urostigma	*Urostigma*		*Religiosae*		*religiosa*	*Mycopsylla mathuriana, M. gardenensis, Homotoma distincta*
					? tsjahela (as *infectoria*)	*Mycopsylla gardenensis*, Homotoma indica§*
			Superbae		*superba*	*Homotoma radiata*
			Caulobotryae		*? virens* (as *infectoria*)	*Mycopsylla gardenensis*, Homotoma indica§*
			Orthoneurae		*? hookeriana*	*Pauropsylla ficicola, P. globuli*
	Leucogyne				*rumphii*	*"Ceropsylla" fulvida*
	Conosycea	*Conosycea*	*Drupaceae*	*Indicae*	*mollis* (as *tomentosa*)	*Mycopsylla gardenensis*
					benghalensis	*Macrohomotoma gladiata*
					altissima	*Homotoma altissimae*
				Crassirameae	*crassiramea* (as *clementis*)	*Macrohomotoma williamsi*
		Benjamina	*Benjamineae*		*benjamina*	*Homotoma benjaminae, H. bakeri, Macrohomotoma robusta*
			Callophylleae		*microcarpa* (some as *retusa*)	*Mycopsylla gardenensis, Macrohomotoma gladiata, M. geniculata, M. sinica, M. striata, Homotoma indica, "Ceropsylla" fulvida*
	Stilpnophyllum				*elastica?*	*Diceraopsylla brunettii*
	Malvanthera		*Malvanthereae*	*Malvanthereae*	*macrophylla*	*Mycopsylla fici*
				Platypodeae	*rubiginosa*	*Mycopsylla proxima*
					obliqua	*Mycopsylla obliqua*
	Galoglychia	*Chlamydodorae*			*thonningii*	*Pseudoeriopsylla nyasae, P. laingi, Homotoma angolensis, H. chlamydodora, Pauropsylla proxima*
					natalensis	*Pseudoeriopsylla laingi, Homotoma chlamydodora*
		Caulocarpae			*ovata* (as *brachypoda*)	*Pseudoeriopsylla carvalhoi*

Pharmacosycea	*Oreosycea*		*Nervosae*		*nervosa*	*Dynopsylla cornuta, D. grandis, D. pinnativena*
Ficus	*Ficus*	*Ficus*	*Caricae*		*carica*	*Homotoma ficus, H. viridis, Trioza buxtoni*
			Podosyceae	*Podosyceae*	*pyriformis*	*Homotoma pyriformiscola*
					erecta	*Homotoma maculata, H. radiata, Paurocephala conchaiensis*
	Rhizocladus		*Plagiostigmaticae*	*Plagiostigmaticae*	*sarmentosa* (as *foveolata*)	*Homotoma wulinensis, Paurocephala conchaiensis*
					pumila (some as *stipulata*)	*Paurocephala conchaiensis, P. pumilae*
	Sycidium	*Sycidium*	*Pungentes*		*minahassae*	*Paurocephala psylloptera*
			Phaeopsilosae		*gul*	*Paurocephala psylloptera*
			Scabrae		*ulmifolia*	*Paurocephala psylloptera, Pauropsylla deflexa, P. triozoptera* (Philippines)
					odorata	*Paurocephala psylloptera*
		Varinga	*Exasperatae*		*exasperata*	*Paurocephala psylloptera* (Ceylon)
		Palaeomorpha	*Pallidae*		*tinctoria* (as *gibbosa*)	*Pauropsylla triozoptera* (Taiwan)
	Sycocarpus	*Sycocarpus*	*Tuberculifasciculatae*	*Congestae*	*nota*	*Paurocephala psylloptera*
				Hispidae	*hispida*	*Paurocephala conchaiensis, P. psylloptera*
				Tuberculifasciculatae	*fistulosa* (as *repandifolia*)	*Paurocephala psylloptera*
Sycomorus	*Sycomorus*				*sycomorus* (some as *gnaphalocarpa*)	*Pauropsylla willcocksi*
					sur (some as *capensis*)	*Pauropsylla trichaeta*
					racemosa	*Pauropsylla depressa, P. purpurescens*
	Neomorphae		*Auriculatae*		*auriculata* (as *roxburghii*)	*Pauropsylla ficicola*
			Variegatae	*Variegatae*	*variegata*	*Pauropsylla udei*
Ficus spp. indet.						*Austrodynopsylla encala, Mycopsylla kina, Macrohomotoma hylocola, M. magna, M. minana, M. striata, M. viridis, M. yunnana, Pseudoeriopsylla kenyae, P. etiennei, Homotoma galbvittata, H. ruiliana, H. xishuangana, H. yunnanica, H. bilineata, Synoza cornutiventris, S. floccosa*

Table 3 Relationships between subfamilies and genera of Homotomidae and Sections of *Ficus* (arranged according to Ramirez, 1980) and other moraceous hosts.

Hosts	Homotomidae		
Ficus sections	Dynopsyllinae	Macrochomotominae	Homotominae
Urostigma		*Mycopsylla*	*Homotoma*
Leucogyne			
Stilpnophyllum	? *Diceraopsylla*		
Americana			
Conosycea		*Mycopsylla, Macrochomotoma*	*Homotoma*
Galoglychia		*Pseudoeriopsylla*	*Homotoma*
Malvanthera		*Mycopsylla*	
Oreosycea	*Dynopsylla*		
Pharmacosycea			
Ficus			*Homotoma*
Sycomorus			
(After Ramirez, 1980)			
Ficus spp. (group unknown)	*Austrodynopsylla* (1 sp.)	*Mycopsylla* (1 sp.) *Macrochomotoma* (6 spp.) *Pseuderiopsylla* (3 spp.)	*Homotoma* (4 spp.) *Synoza* (2 spp.)
Antiaris toxicaria	*Triozamia*		
Host unknown	*Afrodynospylla* (1 sp.)	*Mycopsylla* (3 spp.) *Macrochotoma* (3 spp.)	*Homotoma* (13 spp.) *Synoza* (1 sp.)

several *Homotoma* species; character 4 does not occur in *Synoza* and *Macrohomotoma*.

White & Hodkinson also proposed a sister-group relationship between the Homotomidae and the Phacopteronidae but this was opposed by Hollis (1987) in favour of a sister-group pairing of the Carsidaridae + Homotomidae. Hollis used the following autapomorphies of the adults to diagnose this group.

1. Presence of a pair of large tubercles on the metapostnotum.
2. All three ventral sense organs of the hind femur in a basal position, with the most proximal organ offset from the distal pair.

The two families may be separated as follows:

1 Male subgenital plate with a pair of dorsolateral appendages; male proctiger unipartite; non-tracheate *rs–m* crossvein present in forewing **Carsidaridae**

– Male subgenital plate without dorsolateral appendages; male proctiger bipartite (except *Synoza*); *rs–m* crossvein absent ..... **Homotomidae**

The supraspecific treatment of the family given below is outlined in the following sequenced classification and the phylogeny is summarised in Fig. 1.

Family Homotomidae
- Subfamily Dynopsyllinae (*sedis mutabilis*)
  - Tribe Diceraopsyllini
    - Genus *Diceraopsylla*
  - Tribe Dynopsyllini
    - Subtribe Dynopsyllina
      - Genus *Dynopsylla*
      - Genus *Austrodynopsylla*
    - Subtribe Triozamiina
      - Genus *Triozamia*
      - Genus *Afrodynopsylla*
- Subfamily Macrohomotominae (*sedis mutabilis*)
  - Tribe Edenini
    - Genus *Mycopsylla*
  - Tribe Macrohomotomini
    - Genus *Macrohomotoma*
    - Genus *Pseudoeriopsylla*
- Subfamily Homotominae (*sedis mutabilis*)
  - Tribe Homotomini
    - Genus *Homotoma*
  - Tribe Synozini
    - Genus *Synoza*

The three subfamilies are placed *sedis mutabilis* (sensu Wiley, 1981: 211) above, and as a trifurcation in Fig. 1 because, although each can be independently diagnosed, no pair can be diagnosed as sister-groups.

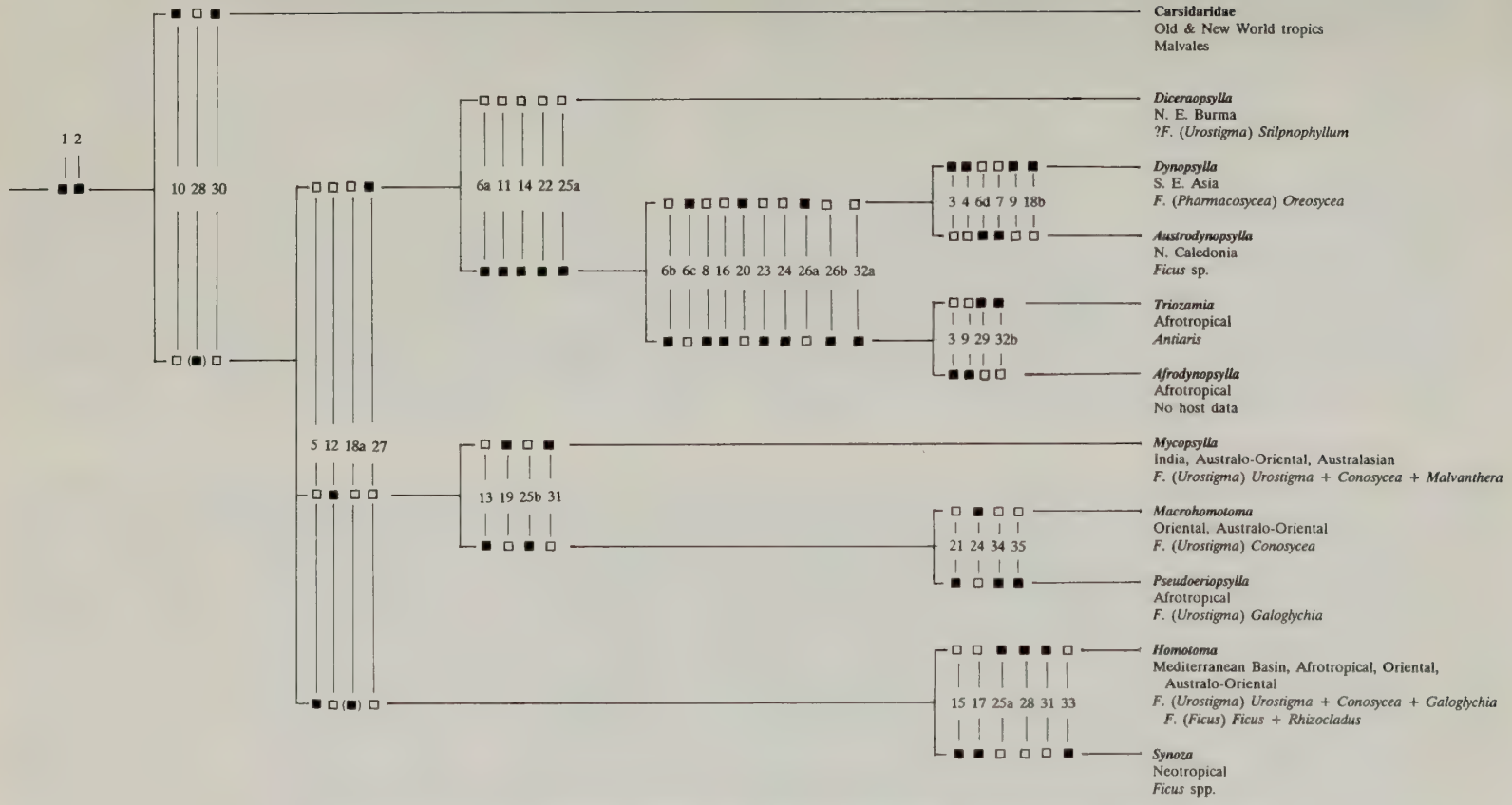

Fig. 1 Proposed cladogram for homotomid genera, with summary of hostplant and distribution data. ( ) denotes character not shared by all members of clade. ■ derived, □ primitive condition. For characters relating to numbers see p. 140.

A major problem in the proposed phylogeny is the position of the genus *Synoza*, as it does not have a bipartite male proctiger, the one positive gain character that diagnoses the Homotomidae within the Homotomidae + Carsidaridae. An alternative to the phylogeny proposed in Fig. 1 is to place *Synoza* as the sister-group to the rest of the Homotomidae. To do this one needs to postulate convergence of antennal and forewing characters in Homotomini and Synozini, a less parsimonious hypothesis than postulating that the unipartite male proctiger of *Synoza* is a reversal.

The characters from which Fig. 1 was derived are as follows (primitive condition in parenthesis).

1. Pair of large tubercles present on metapostnotum (absent)
2. Ventral sense organs of hind femur in basal position, with the most proximal organ offset from distal pair (all three ventral sense organs of hind femur in medial position)
3. Anterolateral tubercles of vertex present (absent)
4. Vertex deeply divided by medial suture anteriorly (not deeply divided anteriorly)
5. Antennal flagellum thickened and densely hirsute (narrow, filiform, sparsely haired)

6a. Rhinaria present on 1st flagellomere (rhinaria absent from 1st flagellomere)

6b. Rhinaria basal on 1st flagellomere (rhinaria absent)

6c. Rhinaria apical on 1st flagellomere (rhinaria absent)

6d. A group of rhinaria present apically on 1st flagellomere (single rhinarium present)

7. A group of rhinaria present on 2nd flagellomere (single rhinarium subapically on 2nd flagellomere)
8. Rhinaria absent from 2nd flagellomere (single rhinarium subapically on 2nd flagellomere)
9. Antennal scape elongate (scape not elongate)
10. Non-tracheate *rs–m* crossvein present in forewing (*rs–m* crossvein absent)
11. Costal break absent (costal break present)
12. Modified pterostigma present (pterostigma absent)
13. Pterostigma ovoid (pterostigma wedge-shaped)
14. Radular areas narrow and defined (radular areas diffuse)
15. Radular area absent from m_2 (radular area present in m_2)
16. *M+Cu* stem absent or very short (*M+Cu* present)
17. *M+Cu* completely fused with *R+M+Cu* stem (*M+Cu* separate)

18a. *M* stem, distal to branching with *Cu* stem, in contact with or partly fused with *Rs* (*M* stem entirely separate)

18b. Basal part of *M* stem in contact or fused with *Rs* (*M* stem entirely separate)

19. M_{1+2} reaching wing margin anteriorly to apex of wing (M_{1+2} reaching wing margin posteriorly to apex of wing)
20. *Cu* stem absent or very short (*Cu* stem present)
21. *Cu* stem much shorter than *M+Cu* stem (*Cu* stem about as long as *M+Cu* stem)
22. *Cu* of hindwing unbranched (*Cu* of hindwing branched)
23. *M+Cu* stem of hindwing indistinct or very short (*M+Cu* stem of hindwing clearly present)
24. Basal spine of hind tibia absent (present)

25a. Apical spurs of hind tibia grouped or few in number (apical spurs forming an almost complete ring)

25b. Outer apical spurs of hind tibia absent (a single outer apical spur present)

26a. Hind basitarsus with a single apical spur (hind basitarsus with 2 apical spurs)

26b. Hind basitarsus without apical spurs (single apical spur present)

27. Abdomen with wax-producing cells present on posterior tergites of adult (abdominal wax-producing cells absent)
28. Male proctiger bipartite (male proctiger unipartite)
29. Lateral lobes of male proctiger each with an inner apical lobe (lateral lobes without inner apical lobes)
30. Male subgenital plate with dorsolateral appendages (dorsolateral appendages absent)
31. Basal segment of aedeagus swollen apically (not swollen)

32a. Apical segment of aedeagus subdivided (not subdivided)

32b. Apical subdivision of apical segment of aedeagus long, narrow (apical subdivision short, swollen)

33. Apical subdivision of apical segment of aedeagus with ventral spiniform processes (spiniform processes absent)
34. Larva with anus and associated wax pores dorsal (anus and wax pores ventral)
35. Larva with antennal flagellum not subdivided into flagellomeres (antennal flagellum divided into flagellomeres)

Key to genera

1 Adult abdomen with groups of wax-producing cells present laterally on posterior tergites (Fig. 46) . . 2

– Wax-producing cells absent from abdominal tergites 6

2 Costal break present in forewing, radular areas diffuse (Fig. 47); hind tibia with a complete crown of apical spurs (Fig. 45), hind basitarsus with 2 apical spurs; rhinaria absent from 1st flagellomere; *Cu* of hindwing branched (Fig. 48) (Diceraopsyllini) ***DICERAOPSYLLA***

– Costal break absent, radular areas narrow and defined (Figs 49, 51, 53, 55); hind tibia with apical spurs arranged 0 (or 1) + 4–6 (Figs 43, 44), hind basitarsus with 0 or 1 apical spur; rhinaria present basally or apically on 1st flagellomere (Figs 27–29); *Cu* of hindwing unbranched (Figs 50, 52, 54, 56) (Dynopsyllini) 3

3 Several rhinaria present at base of 1st flagellomere, 2nd flagellomere without rhinaria (Figs 28, 29); *M+Cu* of forewing absent or very short, *Cu* stem present (Figs 53, 55); branching of *M* and *Cu* of hindwing proximal, indistinct (Figs 54, 56); basal spine of hind tibia present, apical spurs of hind basitarsus absent; apical segment of aedeagus subdivided (Figs 81, 83) (Triozamiina) 4

– One or more rhinaria present subapically on 1st flagellomere (Fig. 27), rhinaria present subapically on 2nd flagellomere; forewing with *M+Cu* present, *Cu* stem very short or absent (Figs 49, 51); hindwing with distinct *M+Cu* stem (Figs 50, 52); hind tibia without a basal spine, hind basitarsus with a single apical spur; apical segment of aedeagus undivided (Figs 77, 79) (Dynopsyllina) 5

4 Anterolateral tubercles of vertex absent (Figs 8, 9); antennal scape not elongate, as long as pedicel (Fig. 9); *M+Cu* absent from forewing (Fig. 53); lateral lobes of ♂ proctiger well-developed and with inner apical lobes; apical part of apical segment of aedeagus elongate, narrow (Fig. 81) . ***TRIOZAMIA***

– Anterolateral tubercles of vertex present (Figs 10, 11); antennal scape swollen and elongate, about three times as long as pedicel (Fig. 11); forewing with short *M+Cu* present (Fig. 55); lateral lobes of ♂ proctiger poorly developed and without inner apical lobes; apical part of apical segment of aedeagus short, swollen (Fig. 83) ..... ***AFRODYNOPSYLLA***

5 Vertex deeply divided by median suture, anterolateral tubercles present (Figs 4, 5); antennal scape elongate, at least twice as long as pedicel (Fig. 5), single rhinarium present subapically on 2nd flagellomere; forewing with *M* stem in contact with or partly fused with *Rs* (Fig. 49) .. **DYNOPSYLLA**

– Vertex shallowly divided by median suture, anterolateral tubercles absent (Figs 6, 7); antennal scape slightly longer than pedicel (Fig. 7); a group of rhinaria present subapically on 1st and 2nd flagellomeres (Fig. 27); forewing with *M* stem entirely separate from *Rs* (Fig. 51) ***AUSTRODYNOPSYLLA***

6 Pterostigma present in forewing, costal break absent (Figs 57–62); antennal flagellum not thickened and densely setose (Macrohomotominae) 7

– Pterostigma absent, costal break present or its position indicated by weakening of sclerotisation of *C+Sc* (Figs 63–74); antennal flagellum thickened and densely setose (Figs 38–40) (Homotominae) 9

7 Pterostigma of forewing elongate, wedge-shaped, M_{1+2} straight, reaching wing margin anterior to wing apex (Figs 57–59); basal segment of aedeagus swollen in apical half (Figs 84, 85) (Edenini) ***MYCOPSYLLA***

– Pterostigma short, ovoid, M_{1+2} curved and reaching wing margin posterior to wing apex (Figs 60–62); basal segment of aedeagus not swollen in apical half (Macrohomotomini) 8

8 Forewing with *Cu* stem about as long as *M+Cu* stem (Fig. 60); basal spine of hind tibia absent. In larva anus and circumanal pore field ventral (Fig. 108); antennal flagellum clearly divided into flagellomeres ***MACROHOMOTOMA***

– *Cu* stem much shorter than *M+Cu* stem (Figs 61, 62); basal spine of hind tibia present. In larva anus and associated pore field apicodorsal (Figs 109–112); antennal flagellum not clearly divided into flagellomeres ..... ***PSEUDOERIOPSYLLA***

9 ♂ proctiger unipartite but with well-developed lateral lobes (Fig. 105); forewing with *M+Cu* stem absent (completely fused with *R+M+Cu*), radular area absent from cell m_2 (Fig. 74); hind tibia with an almost complete ring of apical spurs; apical lobes of aedeagus each with a ventral, spiniform process (Fig. 105) (Synozini) ..... ***SYNOZA***

– ♂ proctiger bipartite (Figs 99, 101–103), *M+Cu* stem present but sometimes immediately adjacent to *R+M+Cu* stem, radular area present in cell m_2 (Figs 63–73); hind tibia with only part of apical ring thickened: apical lobes of aedeagus simple (Figs 99, 101–103) (Homotomini) ..... ***HOMOTOMA***

DYNOPSYLLINAE Bekker-Migdisova

Dynopsyllini Bekker-Migdisova, 1973: 102, in part. Type genus: *Dynopsylla* Crawford.
Homotomini Heslop-Harrison, 1958: 578, in part.

Diagnosed by the presence of groups of wax-producing cells laterally on the posterior abdominal tergites.

The subfamily is divided into two tribes: the Diceraopsyllini, containing *Diceraopsylla*, and the Dynopsyllini. The latter consists of two sister-groups: the Oriental genera *Dynopsylla* and *Austrodynopsylla* comprising the subtribe Dynopsyllina; and the African genera *Triozamia* and *Afrodynopsylla* comprising the subtribe Triozamiina. Hostplants of the group are more diverse

than those of other subfamilies and indicate no clear patterns; *Triozamia* species live on recognised varieties of the African subspecies of *Antiaris toxicaria*, *Dynopsylla* species form galls on species of *Ficus* (*Pharmacosycea*) sect. *Oreosycea*, *Austrodynopsylla* is recorded from *Ficus* sp., and *Diceraopsylla* possibly feeds on *Ficus* (*Urostigma*) sect. *Stilpnophyllum*.

DICERAOPSYLLINI trib. n.

This tribe displays the ground-plan features of the Dynopsyllinae and is diagnosed on the suite of primitive characters given in key couplet 2 (p. 141). Only one species is known.

Type genus: *Diceraopsylla* Crawford, here designated.

DICERAOPSYLLA Crawford

Diceraopsylla Crawford, 1912: 425; Ramakrishna Ayyar, 1924: 622; Heslop-Harrison, 1958: 578; Bekker-Migdisova, 1973: 102; Mathur, 1975: 130; White & Hodkinson, 1985: 274; Hodkinson, 1986: 308; Hollis, 1987: 89. Type species: *D. brunettii* Crawford, by original designation and monotypy.

Diceraeopsylla Hollis, 1984: 28. [Misspelling.]

Description. Medium-sized psyllids, 4.5 mm long. Integument of head and thorax sparsely covered with very short setae. Head (Figs 2, 3), from above, narrower than mesoscutum; disc of vertex weakly concave, with clearly defined foveae and rounded margins, lateral ocelli on raised tubercles, median ocellus visible from above, anterolateral tubercles absent, antennal sockets not enlarged and head not of cleft appearance; antennal scape not enlarged or elongate, flagellum filiform, 2.4 times longer than head width, with a single subapical rhinarium on flagellomeres 2, 4, 6 and 7; genae slightly swollen ventrally; ultimate rostral segment short, less than 3 times longer than wide.

Thorax, in profile, weakly arched, pronotum narrowly visible from above. Forewing (Fig. 47) obovate with rounded apex, 2.3 times longer than wide; veins bearing short, sparse setae; *C+Sc* hardly thickened, costal break present, apex of M_{1+2} reaching wing margin anterior to apex of wing, *M+Cu* as long as *Cu* stem, m_1 cell value 1.3, Cu_{1a} strongly arched, cu_1 cell value 2.5, apex of claval suture adjacent to apex of Cu_{1b}, radular areas diffuse and hardly distinguishable from normal wing spinules. Hindwing (Fig. 48) with *M+Cu* stem present and *Cu* branched, anal lobe not expanded, costal setae grouped. Basal spine of hind tibia absent, apical spurs forming an almost complete ring (Fig. 45); hind basitarsus with 2 apical spurs.

♂ proctiger bipartite, lateral lobes weakly developed and without inner apical lobes; aedeagus 2-segmented, apical part of basal segment weakly expanded (Fig. 75).

♀ terminalia simple, conical; anus with a simple double ring of wax pores.

Larva unknown.

Hostplant. Possibly *Ficus* (*Urostigma*) sect. *Stilpnophyllum*. This is based on a record in BMNH archives of *Diceraopsylla* sp. on 'rubber', Malaya, Malacca; no corresponding specimen is present in the collection.

Comments. Heslop-Harrison placed this genus in the Carsidarini of his polyphyletic Ciriacreminae but Bekker-Migdisova (1973) recognised *Diceraopsylla* as a homotomid and placed it in the Dynopsyllini. Hollis (1984) erroneously transferred the genus to the Aphalaridae.

One species is recognised here.

Diceraopsylla brunettii Crawford

(Figs 2, 3, 45–48, 75)

Diceraopsylla brunettii Crawford, 1912: 425; Ramakrishna Ayyar, 1924: 622; Mathur, 1975: 131; Hodkinson, 1986: 308. Holotype ♂, INDIA 'Darjeeling' (ZSI) [? lost].

Pauropsylla stevensi Laing, 1930: 168; Loginova, 1972: 839; Mathur, 1975: 109. Holotype ♀, INDIA 'Darjeeling' (BMNH) [examined]. **Syn. n.**

Diceraeopsylla stevensi (Laing) Hollis, 1984: 28. [Misspelling.]

Diceraopsylla stevensi (Laing); Hodkinson, 1986: 308.

Hostplant. Possibly *Ficus elastica* (from BMNH records).

Recorded distribution. India (W. Bengal).

Material examined

India: 1 ♀, Darjeeling (holotype of *Pauropsylla stevensi* Laing). **Burma**: 2 ♂, 1 ♀, Kambaiti (BMNH).

Comments. The subjective synonymy proposed above is based on an examination of the available material and a comparison of the original descriptions. According to Mathur (1975), Crawford's holotype of *Diceraopsylla brunettii* is missing from ZSI collections.

DYNOPSYLLINI Bekker-Migdisova

Dynopsyllini Bekker-Migdisova, 1973: 102, in part.

DIAGNOSIS. Rhinaria present basally or apically on 1st flagellomere; in forewing costal break absent, radular areas narrow and defined, venation modified with either *M+Cu* stem or *Cu* stem reduced or absent; *Cu* stem of hindwing unbranched; apical spurs of hind tibia arranged 0 or 1 + 4–6; hind basitarsus with 0 or 1 apical spur.

Four genera are recognised here in two subtribes, the Oriental Dynopsyllina, and the Afrotropical Triozamiina.

DYNOPSYLLINA Bekker-Migdisova

Dynopsyllini Bekker-Migdisova, 1973: 102, in part.

DIAGNOSIS. Rhinaria present subapically on 1st and 2nd flagellomeres; forewing with *M+Cu* present and *Cu* stem very reduced or absent, M_{1+2} reaching wing margin anterior to wing apex; hindwing with distinct *M+Cu* stem; hind tibia without basal spine, apical spurs arranged 1 + 4, hind basitarsus with 1 apical spur; apical segment of aedeagus undivided.

COMMENTS. This subtribe contains two genera, *Dynopsylla* and *Austrodynopsylla*, species of which have an Oriental and Melanesian distribution.

DYNOPSYLLA Crawford

Dynopsylla Crawford, 1913: 295; 1924: 618; Enderlein, 1921: 119; 1926: 399; Kuwayama, 1931: 122; Heslop-Harrison, 1958: 578; 1960: 240; Bekker-Migdisova, 1973: 102; Mathur, 1975: 132; Hodkinson, 1983: 346; 1986: 308; White & Hodkinson, 1985: 274. Type species: *Dynopsylla cornuta* Crawford, by original designation and monotypy.

Sphingocladia Enderlein, 1914: 231; 1918: 482; 1926: 399; Heslop-Harrison, 1958: 578; Bekker-Migdisova, 1973: 102; White & Hodkinson, 1985: 274. Type species: *Sphingocladia pinnativena* Enderlein, by original designation and monotypy. [Synonymised by Enderlein, 1921: 119; resynonymised by Crawford, 1924: 619; Mathur, 1975: 132.]

Crawfordella Enderlein, 1926: 398; Heslop-Harrison, 1958: 578; Bekker-Migdisova, 1973: 102; Hodkinson & White, 1981: 496. Type species: *Dynopsylla grandis* Crawford, by original designation and monotypy. [Synonymised by Mathur, 1975: 132; resynonymised by Yang, 1984: 175.]

Dynopsilla Crawford; Enderlein, 1921: 119. [Misspelling.].

DESCRIPTION. Large psyllids, up to 7.5 mm long. Integument of head and thorax with a moderately dense covering of long setae. Head (Figs 4, 5), from above, narrower than mesoscutum; disc of vertex concave and deeply divided by median suture, foveae moderately defined, frontal margin rounded and deeply incised by median suture, lateral margins rounded, occipital margin obtuseangular, lateral ocelli on raised tubercles, median ocellus visible from above, anterolateral tubercles strongly developed, antennal sockets enlarged giving head a cleft appearance; antennal scape enlarged and elongate, at least twice as long as pedicel, flagellum elongate filiform, with a single subapical rhinarium on flagellomeres 1, 2, 4, 6 and 7; ultimate rostral segment 2.5–5.0 times longer than wide.

Thorax, in profile, strongly arched (Fig. 41), pronotum narrowly visible from above. Forewing (Fig. 49) ovate, with acute apex, about 2.4 times longer than wide; veins bearing long setae, *C+Sc* thickened, costal break absent, apex of M_{1+2} reaching margin anterior to apex of wing, *M+Cu* long, *Cu* stem short or absent, m_1 cell value about 1.0, cu_1 cell value about 1.0, apex of claval suture distant from apex of Cu_{1b}, radular areas clearly defined; hindwing (Fig. 50) broad, *M+Cu* stem present, *Cu* unbranched, anal lobe not enlarged. Basal spine of hind tibia absent, apical spurs arranged 1 + 4; hind basitarsus with 1 apical spur.

♂ proctiger bipartite, lateral lobes developed but without inner lobes; aedeagus 2-segmented (Fig. 77), basal segment not expanded.

♀ genital segment conical, anal pore ring convoluted.

Larva. 5th instar larva of *D. pinnativena* described by Yang (1984).

HOSTPLANTS. Ficus (*Pharmacosycea*) sect. *Oreosycea*; larvae are gall-forming.

COMMENTS. The three species known in this genus all occur on *Ficus nervosa*. They may be separated using the following key:

1 *Cu* stem absent; *M* stem contiguous with basal part of Cu_{1a} and medial part of *Rs* (see Crawford, 1924: 620, fig. 3); antennal pedicel with large ventral lobe ***grandis***

– Short *Cu* stem present; *M* stem contiguous with medial part of Cu_{1a} and medial part of *Rs* (Fig. 49); antennal pedicel without ventral lobe 2

2 Antennal scape twice as long as pedicel, flagellum less than 4 times longer than hind tibia; ultimate rostral segment 2.5 times longer than wide ***pinnativena***

– Antennal scape 3 times longer than pedicel, flagellum 6 times longer than hind tibia; ultimate rostral segment 5 times longer than wide . ***cornuta***

Dynopsylla cornuta Crawford

(Figs 4, 5, 41)

Dynopsylla cornuta Crawford, 1913: 295; 1924: 619; 1925*b*: 62; Enderlein, 1926: 399; Takahashi, 1936: 293; Heslop-Harrison, 1960: 241; Miyatake, 1971: 58; Mathur, 1973: 71; 1975: 133; Hodkinson, 1983: 346. Syntypes, 2♂, 1♀, PHILIPPINES (USNM) [examined].

HOSTPLANT. *Ficus nervosa*; Crawford (1924) stated that the species is gall-forming but did not describe the gall.

RECORDED DISTRIBUTION. Philippines (Luzon and Palawan).

MATERIAL EXAMINED
East Malayasia: 1 ♂, Sarawak. **Indonesia**: 1 ♀, Sulawesi Utara (BMNH); 1 ♀, Sumatra (MNHN). **Philippines**: 3 ♂, 2 ♀, Los Banos (USNM).

Dynopsylla grandis Crawford

'Undetermined species [psyllid]' Ramakrishna Ayyar, 1920: 1030.
Dynopsylla grandis Crawford, 1924: 619; 1925*b*: 62; Takahashi, 1936: 293; Costa Lima, 1942: 103; Mathur, 1973: 70; 1975: 134; Hodkinson, 1986: 308. Syntypes, 3 ♀, INDIA (Kerala), *Ficus nervosa*, (USNM) [examined].
Dinopsylla grandis Crawford; Mani, 1973: 283, [286, probable misidentification]. [Misspelling.]
Crawfordella grandis (Crawford) Enderlein, 1926: 398; Hodkinson & White, 1981: 496.

HOSTPLANT. *Ficus nervosa*; Ramakrishna Ayyar (1920) records this species as forming midrib galls on the upper leaf surface.

RECORDED DISTRIBUTION. India (Kerala). The four specimens Crawford (1925*b*) records from Brazil are regarded as bearing incorrect data.

MATERIAL EXAMINED
India: 3 ♀ (syntypes, USNM).

Dynopsylla pinnativena (Enderlein)

(Figs 49, 50, 77)

Sphingocladia pinnativena Enderlein, 1914: 231; 1918: 482; 1926: 399; Mathur, 1973: 71. Holotype ♂, 'FORMOSA' (IPE) [not examined].
Dynopsylla (*Sphingocladia*) *pinnativena* (Enderlein) Kuwayama, 1922: 368.
Dynopsylla pinnativena (Enderlein) Crawford, 1924: 619; 1925*b*: 62; Kuwayama, 1931: 122; Takahashi, 1936: 293; Miyataki, 1965*b*: 226; Mathur, 1975: 133 Hodkinson, 1983: 346; 1986; 308; Yang, 1984: 175.

HOSTPLANT. *Ficus nervosa*; Takahashi (1936) records this species forming leaf-margin rolls.

RECORDED DISTRIBUTION. Taiwan.

MATERIAL EXAMINED
Vietnam: 1 ♂ (MNHN).

AUSTRODYNOPSYLLA gen. n.

Type species: *Austrodynopsylla encala* sp. n., here designated.

DESCRIPTION. Large psyllids, up to 5.5 mm long. Integument of head and thorax with a moderately dense covering of long setae. Head (Figs 6, 7), from above, narrower than mesoscutum; disc of vertex weakly concave with defined foveae, shallowly divided by median suture, anterior and lateral margins rounded, occipital margin obtuseangular, lateral ocelli on raised tubercles, median ocellus visible from above, anterolateral tubercles absent. Antennal sockets not enlarged and head without cleft appearance; scape not enlarged or elongated; flagellum filiform, 2.4 times longer than head width, with a group of apical rhinaria on flagellomeres 1, 2 and 4, two rhinaria on flagellomere 6 and a double rhinarium on 7; ultimate rostral segment about 3 times longer than wide.

Thorax, in profile, moderately arched, pronotum narrowly visible from above. Forewing (Fig. 51) obovate with rounded apex, about 2.3 times longer than wide, veins bearing long setae, apex of M_{1+2} reaching margin anterior to wing apex, $M+Cu$ stem present, Cu stem virtually absent, m_1 cell value about 1.0, cu_1 cell value about 1.25, apex of claval suture distant from apex of Cu_{1b}, radular areas clearly defined. Hindwing (Fig. 52) broad, $M+Cu$ stem present, Cu unbranched. Basal spine of hind tibia absent, apical spurs of hind tibia arranged 1 + 4 (Fig. 43), hind basitarsus with a single apical spur.

♂ proctiger bipartite, lateral lobes developed and expanded dorsally, without inner lobes apically; aedeagus 2-segmented, basal segment not expanded.

♀ terminalia conical, anal pore convoluted.

Larva unknown.

HOSTPLANT. *Ficus* sp.

COMMENTS. This genus is regarded as the sister-group of *Dynopsylla*; it differs in head and antennal structure (Figs 4–7, 27) and forewing venation (Figs 49, 51).

Austrodynopsylla encala sp. n.

(Figs 6, 7, 27, 43, 51, 52, 78, 79)

DESCRIPTION. Additional to generic characters above. Antennal flagellum 2.35–2.40 times longer than head width; 1st flagellomere with a group of 4–5 rhinaria apically and a subapical rhinarium, 2nd with 3–4 apical rhinaria (Fig. 27), 3rd without rhinaria, 4th with 3 apical rhinaria, 5th without rhinaria, 6th with 2 apical rhinaria, 7th with a double apical rhinarium, 8th with one short pointed seta and one very short truncated seta apically.

Forewing (Fig. 51) hyaline, with small brown patches along $R+M+Cu$, at fork of $M+Cu$ and at apex of Cu_{1b}; 2.13–2.34 times longer than wide, $M+Cu$ stem as long as R stem, Rs short and curved towards M stem, branches of M of equal length; hindwing (Fig. 52) about 0.5 times as long as forewing, with irregularly grouped costal setae; apex of hind tibia as in Fig. 43.

♂ paramere (Fig. 78) lamellar, rounded apically and with a posteroapical tubercle; apical segment of aedeagus (Fig. 79) simple, end-tube of ductus ejaculatorius elongate.

♀ terminalia conical, apices of proctiger and subgenital plate acute, valvulae without serrations.

Measurements (1 ♂, 1 ♀). Maximum width of head, ♂ 0.95, ♀ 0.80; length of antennal flagellum, ♂ 2.28, ♀ 1.88; length of ultimate rostral segment, ♂ 0.19; length of forewing, ♂ 3.85, ♀ 4.55; length of hind tibia, ♂ 0.98, ♀, 0.80. (♀ measurements taken from dry specimen.)

HOSTPLANT. Adult (1 ♀) taken from *Ficus sp.*

Holotype ♂, **New Caledonia**: Mt Koghi, 400-600 m, ii.1973 (*Krauss*) (BPBM); slide-mounted.

Paratype. **New Caledonia**: 1 ♀, Ile des Pins, 7 km N. Kuto, 3–100 m, 16.viii.1979, on *Ficus* sp. (*Gagné*) (BMNH); dry mounted.

TRIOZAMIINA Bekker-Migdisova

Triozamiini Bekker-Migdisova, 1973: 115. Type genus: *Triozamia Vondráček.*

Triozamini Bekker-Migdisova; Hollis, 1984: 9. [Misspelling.]

Triozamiinae Bekker-Migdisova; White & Hodkinson, 1985: 273.

DIAGNOSIS. Several rhinaria present at base or all over surface of 1st flagellomere, 2nd flagellomere without rhinaria; $M+Cu$ stem absent or very short, apex of M_{1+2} reaching wing margin posterior to wing apex, Cu stem present; hindwing with $M+Cu$ stem absent or indistinct; basal spine of hind tibia present, apical spurs arranged 0 + 4–7; apical spurs of hind basitarsus absent; aedeagus 3-segmented.

COMMENTS. This is the sister-group of Dynopsyllina; it contains two Afrotropical genera, *Triozamia* and *Afrodynopsylla*.

TRIOZAMIA Vondráček

Triozamia Vondráček, 1963: 266; Bekker-Migdisova, 1973: 114; Hollis, 1984: 22; White & Hodkinson, 1985: 240. Type species: *Rhinopsylla lamborni* Newstead, by original designation and monotypy.

DESCRIPTION. Robust psyllids, up to 5.5 mm long, somewhat dorsoventrally flattened. Integument of head and thorax densely covered with short setae. Head (Figs 8, 9), from above, slightly narrower than mesoscutum; disc of vertex concave, shallowly divided by median suture, foveae distinct, frontal margin rounded and not deeply divided by median suture, lateral and occipital margins angular, lateral ocelli not on raised tubercles, median ocellus not visible in dorsal view, anterolateral tubercles absent, genae slightly enlarged ventrally and each with a small tubercle below the antennal socket; antennal scape not enlarged or elongate, flagellum filiform, about twice as long as head width, 1st flagellomere bearing several rhinaria, 2nd without rhinaria (Fig. 28), a single subapical rhinarium present on flagellomeres 4, 6 and 7; ultimate rostral segment elongate, 4.2–6.0 times longer than wide.

Thorax, in profile, weakly arched; pronotum wide, clearly visible from above; forewing (Fig. 53) elongate ovate with subangular apex, about 2.75 times longer than wide, veins bearing short setae, $C+Sc$ thickened, costal break absent, apex of M_{1+2} reaching wing margin at apex of wing, $M+Cu$ absent, Cu stem present, m_1 cell value

about 4.5, cu_1 cell value about 0.5, apex of claval suture adjacent to apex of Cu_{1b}, radular areas clearly defined; hindwing (Fig. 54) narrow, *M+Cu* stem not clearly defined, *Cu* unbranched. Hind tibia with a basal spine, apical spurs arranged 0 + 6–7 (Fig. 44), hind basitarsus without apical spurs.

♂ proctiger bipartite, with well-developed lateral lobes that bear inner apical lobes; aedeagus 3-segmented, apical segment elongate (Fig. 81).

♀ terminalia elongate, conical; anal pore ring convoluted.

Larva. 5th instar larva of *T. lamborni* described by Hollis (1984).

HOSTPLANT. *Antiaris toxicaria welwitchii.*

COMMENTS. Hollis (1984) retained *Triozamia* in the Triozidae on the basis of the trifurcation of *R+M+Cu* and the absence of a costal break and pterostigma in the forewing, but was doubtful of its position within that family. White & Hodkinson (1985) placed the genus as the sister-group of the rest of the Triozidae minus *Neolithus*. Given the present diagnosis of the Homotomidae, *Triozamia* is more naturally placed here, and the presence of wax-producing cells on the posterior tergites of the adult abdomen indicate its relationship with other members of the Dynopsyllinae. The presence of several rhinaria on the 1st flagellomere and their absence from the 2nd flagellomere, the reduced *M+Cu* stem of the forewing, the proximal branching of *M+Cu* in the hindwing, the absence of apical spurs on the hind basitarsus, and the 3-segmented aedeagus suggest a sister-group relationship with *Afrodynopsylla*. The two genera may be separated using couplet 4 of the key (p. 141).

Three species are included, fully treated by Hollis (1984).

Triozamia lamborni (Newstead)

(Figs 8, 9, 28, 44, 53, 54, 80, 81)

Rhinopsylla lamborni Newstead, 1914: 520; Eastop, 1961: 168. Holotype ♂, NIGERIA [not traced].

Triozamia lamborni (Newstead) Vondráček, 1963: 266, in part; Akanbi, 1981: 113; Hollis, 1984: 23.

Triozamia lambourni (Newstead); Roberts, 1969: 78. [Misspelling.]

HOSTPLANT. *Antiaris toxicaria welwitchii* var. *africana.*

RECORDED DISTRIBUTION. Senegal, Ivory Coast, Ghana, Nigeria, Zaire and Tanzania.

MATERIAL EXAMINED

Adults and larvae from **Senegal**, **Guinea**, **Ivory Coast**, **Ghana**, **Nigeria**, **Zaire** and **Tanzania** (BMNH).

Triozamia usambarensis Hollis

Triozamia usambarensis Hollis, 1984: 24. Holotype ♂, TANZANIA (BMNH) [examined].

HOSTPLANT. *Antiaris toxicaria welwitchii* var. *usambarensis.*

RECORDED DISTRIBUTION. Tanzania.

MATERIAL EXAMINED

Tanzania (type series, BMNH).

Triozamia vondraceki Hollis

[*Triozamia lamborni* (Newstead); Vondráček, 1963: 268, in part. Misidentification.]

Triozamia vondraceki Hollis, 1984: 24. Holotype ♂, UGANDA (BMNH) [examined].

HOSTPLANT. *Antiaris toxicaria welwitchii* [? var. *welwitchii*].

RECORDED DISTRIBUTION. Uganda, Central African Republic.

MATERIAL EXAMINED

Uganda, Central African Republic (type series, BMNH).

AFRODYNOPSYLLA gen. n.

Type species: *Afrodynopsylla gigantea* sp. n., here designated.

DESCRIPTION. Large psyllids, up to 8.0 mm. Integument of head and thorax densely clothed with moderately long setae and with groups of very long setae (Figs 10, 11, 42). Head (Figs 10, 11), from above, narrower than mesoscutum; disc of vertex concave, with clearly defined foveae, frontal margin rounded, lateral margins angular, occipital margin sharply defined, lateral ocelli on raised tubercles, median ocellus visible from above, anterolateral tubercles well-developed; antennal sockets enlarged, giving head cleft appearance, scape enlarged and elongate, pedicel thickened; flagellum filiform, about 2.5 times longer than head width, 1st flagellomere with basal swelling that bears a group of rhinaria (Fig. 29), rhinaria absent from 2nd flagellomere, a single rhinarium present subapically on flagellomeres 4, 6 and 7; ultimate rostral segment elongate.

Thorax, in profile (Fig. 42), strongly arched, pronotum broad and clearly visible from above; forewing (Fig. 55) ovate, with subacute apex, about 2.2 times longer than wide, veins bearing sparse short setae, *C+Sc* strongly thickened, costal break absent, apex of M_{1+2} reaching wing margin posterior to wing apex, *M+Cu* stem very short, m_1 cell value about 2.4, cu_1 cell value about 1.2, apex of claval suture adjacent to apex of Cu_{1b}, radular spines in small but clearly defined groups; hindwing (Fig. 56) with *M+Cu* stem absent, *Cu* unbranched, anal lobe expanded; hind tibia with a basal spine, apical spurs arranged 0 + 4.

♂ proctiger bipartite, lateral lobes well-developed but without inner apical lobes; aedeagus 3-segmented.

♀ terminalia conical, anus with a simple, double ring of wax-producing cells.

Larva and hostplant unknown.

Afrodynopsylla gigantea sp. n.

(Figs 10, 11, 29, 42, 55, 56, 82, 83)

Description. Antennal flagellum 2.0–2.5 times longer than head width; 1st flagellomere with a basal swelling bearing a group of 15–20 rhinaria mainly on ventral surface (Fig. 29), 8th flagellomere with a long pointed seta and a short truncated seta apically; ultimate rostral segment 4.5 times longer than wide.

Dorsum of thorax with tufts of long setae (Fig. 42); forewing (Fig. 55) 2.15–2.35 times longer than wide, membrane hyaline, *C+Sc* considerably thickened, *Rs* straight; hindwing (Fig. 56) about half as long as forewing; hind tibia with a well-developed basal spine; hind basitarsus much longer than apical tarsal segment.

♂ paramere as in Fig. 82; aedeagus 3-segmented (Fig. 83), apical segment short and strongly swollen apically.

♀ terminalia short, conical in profile; apices of proctiger and subgenital plate acute; apices of valvulae not serrate.

Measurements (2 ♂, 1 ♀). Maximum width of head, ♂ 1.02–1.14, ♀ 1.14; length of antennal flagellum, ♂ 2.58–2.68, ♀ 2.21; length of ultimate rostral segment, ♂ 0.42–0.44, ♀ 0.42; length of forewing, ♂ 5.16–5.43, ♀ 5.69; length of hind tibia, ♂ and ♀, 1.14.

Holotype ♂, **Angola**: Salazar, I.I.A.A., 9–15.iii.1972, at light (*Hollis*) (BMNH); dry-mounted.

Paratypes. **Angola**: 1 ♀, same data as holotype. **Central African Republic**: 3 ♂, 2 ♀, Lobaye Mbaik, rte Mbale, 12.ii.1969, light trap in forest zone (*Boulard*). **Nigeria**: 1 ♀, Ile-Ife, 11.i.1971 (*Medler*). (BMNH; MNHN); dry- and slide-mounted.

MACROHOMOTOMINAE White & Hodkinson

Macrohomotominae White & Hodkinson, 1985: 272. Type genus: *Macrohomotoma* Kuwayama.

Dynopsyllini Bekker-Migdisova, 1973: 102, in part.

Phacopteronini Heslop-Harrison, 1958: 578, in part.

Homotomini Heslop-Harrison, 1958: 578, in part.

Diagnosed by the presence of a pterostigma and the absence of a costal break in the forewing.

White & Hodkinson (1985) defined the Macrohomotominae (as clade 34, fig. 188) on the following characters.

1. Male proctiger expanded posteriorly to form caudal lobes.
2. Circum-anal ring [of wax-producing cells] of larva constricted on either side of anus, or broken into three groups.
3. Body margin of larva without sectasetae or derivable structures.
4. Dorsal surface of larva without sectasetae or derivable structures.

The first character is diagnostic for the Homotomidae and is of no value below this level. The second character is not useful as it occurs also in the Homotominae. The third character is not valid as marginal sectasetae do occur in larvae of *Mycopsylla, Macrohomotoma* and *Pseudoeriopsylla*. The fourth character is not diagnostic as sectasetae are present dorsally on the caudal plate of *Pseudoeriopsylla* larvae, and sectasetae are absent from the larvae of the species of Dynopsyllinae examined and described.

The only adult character found to be useful in diagnosing the Macrohomotominae is the presence of a pterostigma in the forewing, coupled with the absence of a costal break. No diagnostic characters were found in the larvae.

Hostplants of the group are in *Ficus* (*Urostigma*) sects *Urostigma, Conosycea, Malvanthera* and *Galoglychia*.

Two tribes are recognised.

EDENINI Bhanotar, Ghosh & Ghosh.

Edenini Bhanotar, Ghosh & Ghosh, 1972: 119. Type genus: *Edenus* Bhanotar, Ghosh & Ghosh.

Dynopsyllini Bekker-Migdisova, 1973: 102, in part.

Mycopsyllini White & Hodkinson, 1985: 242, 272. Type genus: *Mycopsylla* Froggatt. **Syn. n.**

DIAGNOSIS. Pterostigma of forewing elongate, wedge-shaped; M_{1+2} straight, reaching wing margin anterior to wing apex; basal segment of aedeagus swollen in apical half.

A single genus, *Mycopsylla*, is included, species of which have an Oriental and Australasian distribution.

MYCOPSYLLA Froggatt

Mycopsylla Froggatt, 1901: 258; Aulmann, 1913: 30; Tuthill & Taylor, 1955: 248; Mathur, 1975: 150; Morgan, 1984: 118; Kandasamy, 1987: 68. Type species: *Psylla fici* Tryon, by original designation.

Edenus Bhanotar, Ghosh & Ghosh, 1972: 119. Type species: *Edenus gardenensis* Bhanotar, Ghosh & Ghosh, by monotypy. [Synonymised by Hodkinson, 1986: 318.]

DESCRIPTION. Medium- to large-sized psyllids, up to 8.0 mm long. Integument of head and thorax sparsely covered with short setae. Head (Figs 12–17), in dorsal view, almost as wide as mesoscutum; disc of vertex from flat to concave and deeply incised by median suture, foveae weak, anterior and lateral margins rounded, occipital margin angular, lateral ocelli not or on slightly raised tubercles, median ocellus just visible from above, anterolateral tubercles absent or present; antennal sockets weakly enlarged, giving head a weakly cleft appearance, antennal scape not enlarged or elongate; flagellum (Figs 30, 31) filiform, 1.0–3.3 times longer than head width, a single subapical rhinarium always present on flagellomeres 2, 4, 6 and 7, sometimes also present on 1, 3 and 5; genae swollen ventrally; ultimate rostral segment 1.8–3.4 times longer than wide.

Thorax, in profile, moderately arched, mesopraescutum sharply descending anteriorly, pronotum hardly visible from above; forewing (Figs 57–59) narrowly obovate with acute apex, 2.4–2.7 times longer than wide, *C+Sc* thickened basally, costal break absent, elongate wedge-shaped pterostigma present, apex of M_{1+2} reaching wing margin anterior to wing apex, *M+Cu* stem longer or shorter than *Cu* stem, m_1 cell value about 1.0, cu_1 cell value 1.4–1.7, apex of claval suture adjacent to apex of Cu_{1b}, radular areas diffuse or partly defined; basal spine of hind tibia present, apical spurs forming an incomplete ring with inner spurs larger than outer spurs; hind basitarsus with 2 apical spurs.

♂ proctiger bipartite; lateral lobes well-developed, either elongate-narrow and without inner apical lobes (Figs 84, 85) or broad-robust with inner apical lobes (Figs 87, 90); basal segment of aedeagus swollen in apical half, apical segment either elongate and simple (Figs 84, 85) or short and modified (Figs 87, 90).

♀ terminalia either short, with proctiger rounded apically and anal pore ring convoluted (Fig. 86), or conical with proctiger acute apically and anal pore ring simple (Fig. 89).

Larva. The larvae of *M. fici* and *M. proxima* are described by Froggatt (1901). Dorsal and ventral caudal plates of *M. kina* and *M. obliqua* are figured below (Figs 106, 107).

COMMENTS. Nine nominal species, including four described below, are included in the genus. However, the three recorded names for the Indian species are probably synonymous. Two species-groups can be recognised.

fici group

Antennal flagellum elongate, with rhinaria on flagellomeres 2, 4, 6 and 7, and occasionally on 1; *Cu* stem longer than *M+Cu* stem; aedeagus short and robust with modified apical segment; lateral lobes of ♂ proctiger elongate-narrow; ♀ terminalia short and rounded apically, with convoluted anal pore ring.

Seven nominal species are included in this group, distributed in India, Australia, New Guinea and New Caledonia on *Ficus* (*Urostigma*) sects *Urostigma, Conosycea* and *Malvanthera*. Apart from the three Indian 'species' they can be individually identified by the structure of the male genitalia.

Mycopsylla gardenensis (Bhanotar, Ghosh & Ghosh)

(Figs 12, 13, 57)

Edenus gardenensis Bhanotar, Ghosh & Ghosh, 1972: 109. Holotype ♀, INDIA: on *Psidium guajava* (ZSI) [not examined].

Mycopsylla gardenesis (Bhanotor, Ghosh & Ghosh) Rajamohan et al., 1975: 138. [Misspelling.]

Mycopsylla gardenensis (Bhanotar, Ghosh & Ghosh); Hodkinson, 1986: 318; Kandasamy, 1987: 69.

HOSTPLANTS. *Ficus mollis, F. tsjahela* (or *F. virens*). *F. microcarpa*, possibly *F. religiosa*,

doubtfully *Psidium guajava*. According to Rajamohan et al. (1975) the larvae cause leaf-margin rolls on *F. mollis*.

RECORDED DISTRIBUTION. India: W. Bengal, Tamil Nadu, Orissa.

MATERIAL EXAMINED
India: Tamil Nadu, adults and larvae, on *F. mollis*; adults and larvae, on *F. religiosa*; Orissa, adults, on *F. tsjahela* (or *F. virens*). **Bangladesh**: adults. **Singapore**: larvae on *F. microcarpa* (BMNH).

Mycopsylla indica Mathur

Mycopsylla indica Mathur, 1975: 151; Hodkinson, 1986: 319; Kandasamy, 1987: 71, 72, 76. Holotype ♂, INDIA: on *Santalum album* (FRI) [not examined].

HOSTPLANT. Recorded by Mathur on *Santalum album* but this is regarded here as a doubtful host record as the type series was collected during the 'Sandal Insect Survey' and many of these records are for vagrant specimens.

RECORDED DISTRIBUTION. India: Tamil Nadu.
No material examined.

COMMENTS. This species is probably not distinct from *M. gardenensis*.

Mycopsylla mathuriana Kandasamy

Mycopsylla mathuriana Kandasamy, 1987: 71. Holotype ♀, INDIA: on *Ficus religiosa* (ZSI) [not examined].

HOSTPLANT. *Ficus religiosa*.

RECORDED DISTRIBUTION. India: Tamil Nadu.
No material examined.

COMMENTS. This species is probably not distinct from *M. gardenensis*.

Mycopsylla fici (Tryon)

Psylla fici Tryon, 1895: 60. Syntypes adults, larvae and eggs, AUSTRALIA (Qld): on *Ficus macrophylla* (not traced).
Mycopsylla fici (Tryon) Froggatt, 1901: 259; 1923: 146; Tuthill & Taylor, 1955: 248; Hodkinson, 1983: 354; Morgan, 1984: 110.
Mycopsylla fici Froggatt; Aulmann, 1913: 30.

HOSTPLANT. *Ficus macrophylla*

RECORDED DISTRIBUTION. Australia: NSW, QLD.

MATERIAL EXAMINED
Australia: NSW, QLD, Lord Howe Is. (BMNH).

Mycopsylla proxima Froggatt

Mycopsylla proxima Froggatt, 1901: 261; Aulmann, 1913: 31; Tuthill & Taylor, 1955: 248; Morgan, 1984: 110. Syntypes larvae and adults, AUSTRALIA (NSW): on *Ficus rubiginosa* (?ANIC) [not examined].

HOSTPLANT. *Ficus rubiginosa*.

RECORDED DISTRIBUTION. Australia: NSW.

MATERIAL EXAMINED
Australia: 2 ♂, NSW, 'on yellow fig' BMNH).

Mycopsylla kina sp. n.

(Figs 30, 84, 106)

DESCRIPTION. Moderately large psyllids, up to 6.5 mm. long. Vertex concave, without anterolateral tubercles or ridges. Antennal flagellum long, 3.0–3.3 times longer than head width, 1st flagellomere (Fig. 30) with about 17 rhinaria ventrally in basal third, 2nd with 1 subapical rhinarium, 4th with 1 or 2, 6th with 1, 7th with 1, 8th with 1 short truncate and 1 long pointed seta apically; ultimate rostral segment 2.8 times longer than wide.

Forewing 2.39–2.54 times longer than wide, *M+Cu* stem shorter than *Cu* stem, m_1 cell value about 1.0, cu_1 cell value 1.7, radular areas diffuse, apex of claval suture close but not adjacent to apex of Cu_{1b}; hindwing 0.5 times as long as forewing.

♂ proctiger (Fig. 84) with narrow, curved, strap-like lateral lobes without inner apical lobes; aedeagus as in Fig. 84; paramere conical (Fig. 84).

♀ terminalia short, bulbous; proctiger broadly rounded apically, 0.5 times as long as head width, circum-anal pore ring weakly convoluted; subgenital plate broadly incised apically.

Measurements (3 ♂, 1 ♀). Maximum width of head, ♂ 1.04–1.12, ♀ 1.18; length of antennal flagellum, ♂ 3.2–3.54, ♀ 3.52; length of ultimate rostral segment, ♂ 0.18, ♀ 0.20; length of forewing, ♂ 4.68–4.88, ♀ 6.10; length of hind tibia, ♂ 1.02–1.08, ♀ 1.10; length of ♀ proctiger, 0.62.

Larva. Dorsal and ventral caudal plates and circum-anal pore as in Fig. 106, marginal sectasetae on strongly raised bases.

HOSTPLANT. *Ficus* sp., 'hard fruited'.

Holotype ♂, **Papua New Guinea**: E. Highlands, Aiyura, 5,800′, *Ficus*, hard fruited, under latex cover, 1958 (*Barrett*) (BMNH); slide-mounted.

Paratypes. **Papua New Guinea**: 2 ♂, 6 ♀, larvae, same data as holotype (BMNH); slide- and dry-mounted.

COMMENTS. This species may be distinguished from other members of the *fici* group by the group of rhinaria present at the base of the 1st flagellomere and the simple, non-bifid form of the male paramere.

From the data accompanying the type series it would seem that the larvae of this species live beneath a cover composed of their dried anal exudate, similar to both the described Australian species. The larvae of another member of the *fici* group, *M. gardenensis*, live within the leaf-margin rolls they induce in their host. This contrasts with the larvae of *M. obliqua* which are free-living.

Mycopsylla tuberculata sp. n.

(Figs 14, 15, 85, 86)

DESCRIPTION. Medium-sized psyllids, up to 5.0 mm. long. Head (Figs 14, 15) with concave vertex and well-developed anterolateral tubercles. Antennal flagellum 2.5 times longer than head width, a single subapical rhinarium present on flagellomeres 2, 4, 6 and 7, 8th flagellomere with 1 long pointed medial seta and 1 short truncate apical seta; genae swollen ventrally; ultimate rostral segment 3.0 times longer than wide.

Forewing 2.54–2.62 times longer than wide, *M+Cu* stem shorter than *Cu* stem, m_1 cell value 1.0, cu_1 cell value 1.5, radular areas diffuse, apex of claval suture a little distant from apex of Cu_{1b}; hindwing 0.6 times as long as forewing.

♂ proctiger (Fig. 85) with strap-like, curved lateral lobes; aedeagus as in Fig. 85; paramere (Fig. 85) strongly bifid apically.

♀ terminalia (Fig. 86) short, rounded; proctiger broadly rounded apically, circum-anal pore ring weakly convoluted; subgenital plate broadly incised apically.

Measurements (1 ♂, 1 ♀). Maximum width of head, ♂ 0.8, ♀ 0.84; length of antennal flagellum, ♀ 2.1; length of ultimate rostral segment, ♂ 0.15, ♀ 0.16; length of forewing, ♂ 3.46, ♀ 4.16; length of hind tibia, ♂ 0.74, ♀ 0.76; length of ♀ proctiger, 0.54.

Larva and hostplant unknown.

Holotype ♂, **New Caledonia**: Ile des Pins, 7 km N. Kuto, 30–100 m, 16.viii.1979 (*Gagné*) (BPBM); slide-mounted.

Paratypes. **New Caledonia**: 1 ♀, Mts des Koghis, 400–600 m, i.1969; 1 ♀, ii.1978; 1 ♀, Poindimie, 0–50 m, i.1969 (*Krauss*) (BPBM; BMNH); slide- and dry-mounted.

COMMENTS. *M. tuberculata* differs from other members of the *fici* group in having well-developed anterolateral tubercles on the vertex and a distinctive aedeagal apex that bears a medioventral spinulose lobe. In *M. gardenensis* the ventral lobe is convoluted and membraneous, and in *fici* and *proxima* the structure is bilobed.

obliqua group

Antennal flagellum short, with a single apical seta and a single apical flagellum on flagellomeres 1–7; Cu stem shorter than *M+Cu* stem; ♂ aedeagus long and slender; lateral lobes of ♂ proctiger broad, with inner apical lobes; ♀ terminalia long, conical, acute apically, anal pore oval.

Two closely related species are included here, one from New Caledonia on *Ficus* (*Urostigma*) *Malvanthera*; the other from Loyalty Is, with unknown trophic relationships.

Mycopsylla obliqua sp. n.

(Figs 16, 17, 31, 58, 87-89, 107)

DESCRIPTION. Moderately large psyllids, up to 5.0 mm long. Head (Figs 16, 17) with vertex weakly concave and shallowly incised by median suture, anterolateral tubercles absent. Antennal flagellum (Fig. 31) 1.25 (♂) and 1.0 (♀) times longer than head width, a single subapical rhinarium present on flagellomeres 1–7 and a single, long, subapical seta present on flagellomeres 1–6, 8th flagellomere with 2 long setae apically; ultimate rostral segment 2.0 times longer than wide.

Forewing (Fig. 58) 2.5–2.7 times longer than wide; R_1 short, one-third the length of *R* stem, *Rs* at least 3 times longer than *R* stem with its apex at the apex of the pterostigma, *M+Cu* longer than *Cu* stem, m_1 cell value 1.0, cu_1 cell value 1.4, apex of claval suture distant from apex of Cu_{1b}, radular areas defined; hindwing almost 0.5 times as long as forewing.

♂ proctiger (Fig. 87) with broad lateral lobes; apex of aedeagus (Fig. 87) narrow; paramere (Fig. 88) thumb-shaped in profile, inner surface with a small median tubercle, an anteroapical ridge and a posteroapical tubercle.

♀ terminalia (Fig. 89) conical, proctiger 1.06–1.08 times longer than head width, circum-anal pore ring simple.

Measurements (3 ♂, 3 ♀). Maximum width of head, ♂ 0.92–0.98, ♀ 1.02–1.04; length of antennal flagellum, ♂ 1.16–1.24, ♀ 1.00–1.04; length of ultimate rostral segment, ♂ 0.10, ♀ 0.12; length of forewing, ♂ 3.56–3.88, ♀ 4.16–4.32; length of hind tibia, ♂ and ♀, 0.70–0.72; length of ♀ proctiger, 1.08–1.10.

Larva. Dorsal and ventral caudal plates and circum-anal pore ring as in Fig. 107; marginal setae of caudal plates not on raised tubercles.

HOSTPLANT. *Ficus obligua*.

Holotype ♂, **New Caledonia**: Noumea, ORSTOM Centre, 20–24.iii.1982, *Ficus obliqua* (*Hollis*) (BMNH); dry-mounted.

Paratypes. **New Caledonia**: 6 ♂, 8 ♀, larvae, same data as holotype (BMNH; MNHN); slide- and dry-mounted.

Mycopsylla propinqua sp. n.

(Figs 59, 90, 91)

DESCRIPTION. Very similar to *M. obliqua* but differing in forewing venation (Figs 58, 59), and in the structure of the ♂ proctiger (Figs 87, 90), aedeagus (Figs 87, 90) and paramere (Figs 88, 91).

Antennal flagellum 1.51 times longer than head width; ultimate rostral segment 1.8 times longer than wide.

Forewing (Fig. 59) 2.72 times longer than wide; R_1 half as long as R stem, Rs just over twice as long as R stem with its apex reaching the posterior margin of the pterostigma proximal to the latter's apex, m_1 cell value 1.0, cu_1 cell value 1.59; hindwing 0.35 times as long as forewing.

♂ proctiger (Fig. 90) with lateral lobes narrow basally and broadening apically; aedeagus (Fig. 90) bulbous apically; paramere (Fig. 91) with obliquely truncate apex, inner surface with an anterior tubercle in apical third and 2 parallel ridges anteroapically.

♀ unknown.

Measurements (1 ♂). Maximum width of head, 1.06; length of antennal flagellum, 1.60; length of ultimate rostral segment, 0.11; length of forewing, 4.68; length of hind tibia, 0.82.

Larva and hostplant unknown.

Holotype ♂, **Loyalty Is**: We, Lifou I., 16–18.ii.1963, light trap (*Yoshimoto*) (BPBM); slide-mounted.

MACROHOMOTOMINI

Macrohomotomini White & Hodkinson, 1985: 242, 272. Type genus: *Macrohomotoma* Kuwayama.

DIAGNOSIS. Pterostigma short, ovoid; M_{1+2} curved and reaching wing margin posterior to wing apex; basal segment of aedeagus not swollen in apical half.

Two genera are included here, the Oriental *Macrohomotoma* and the Afrotropical *Pseudoeriopsylla*. These genera were synonymised by Crawford (1914) and the synonymy was accepted by Enderlein (1921). White & Hodkinson (1985) treated them as separate genera and this is accepted here as both groups can be distinguished on adult and larval characteristics (see key couplet 8, p. 141), and have a clear geographical and hostplant separation.

MACROHOMOTOMA Kuwayama

Macrohomotoma Kuwayama, 1907: 179; Crawford, 1911: 483; 1914: 62; 1919: 157; 1925*b*: 36; Aulmann, 1913: 36; Enderlein, 1914: 233; 1921: 119; Ramakrishna Ayyar, 1924: 622; Boselli, 1930: 178; Kuwayama, 1931: 125; Heslop-Harrison, 1958: 578; 1960: 161; Loginova, 1972: 843; Bekker-Migdisova, 1973: 102; Mathur, 1975: 135; Hodkinson, 1983: 352; 1986: 316; Yang, 1984: 156; Yang & Li 1984*b*: 370. Type species: *Macrohomotoma gladiata* Kuwayama, by original designation and monotypy.

DESCRIPTION. Large psyllids, up to 9.5 mm long. Integument of head and thorax sparsely covered with very short setae. Head (Figs 18, 19), from above, as wide as mesoscutum; disc of vertex weakly concave, foveae forming transverse depressions, anterior and lateral margins rounded, occipital margin angular, lateral ocelli not on raised tubercles, median ocellus just visible from above, anterolateral tubercles absent; antennal sockets not enlarged and head without cleft appearance; antennal scape not enlarged or elongate; flagellum short, filiform, 0.7–0.9 times as long as head width, rhinaria present on flagellomeres 1–7; genae swollen ventrally; ultimate rostral segment about twice as long as wide.

Thorax, in profile, strongly arched, pronotum visible from above; forewing (Fig. 60) ovate, with subacute apex, 2.2–2.6 times longer than wide, veins bearing short setae, $C+Sc$ not thickened, costal break absent, ovoid pterostigma present, apex of M_{1+2} reaching wing margin posterior to wing apex, Cu stem about as long as $M+Cu$ stem, m_1 cell value about 1.8, cu_1 cell value about 1.0, apex of claval suture adjacent to apex of Cu_{1b}, radular areas well-defined; basal spine of hind tibia absent, apical spurs arranged 0 + 4, hind basitarsus with 2 apical spurs.

♂ proctiger bipartite, lateral lobes well-developed and each with an inner apical lobe; aedeagus 2-segmented; basal segment weakly swollen subapically.

♀ terminalia conical, anal pore ring normally simple oval, rarely convoluted.

Larva. Anus and associated wax pores ventral (Fig. 108).

HOSTPLANTS. *Ficus* (*Urostigma*) sect. *Conosycea*.

COMMENTS. Fourteen species are currently recognised in this genus, distributed from India to N. Queensland. However, most of these are poorly described and the genus requires revision.

Macrohomotoma apsylloides (Crawford)

Pauropsylla apsylloides Crawford, 1919:144. Syntypes ♂ and ♀, INDONESIA, EAST MALAYSIA, MACAO, HAWAII (USNM) [not examined].

Macrohomotoma apsylloides (Crawford) Crawford, 1920: 353; 1925*a*: 36; Heslop- Harrison, 1958: 570; 1960: 161; Loginova, 1972: 840; Mathur, 1975: 139; Hodkinson, 1983: 352; 1986: 316.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION: Indonesia: Tanimbar Is. East Malaysia: Sabah. Macao and Hawaii.
No material examined.

Macrohomotoma geniculata Mathur

Macrohomotoma geniculata Mathur, 1975: 136; Hodkinson, 1986: 316. Holotype ♂, INDIA: on *Ficus microcarpa* (FRI) [not examined].

HOSTPLANT. *Ficus microcarpa*.

RECORDED DISTRIBUTION. India (Uttar Pradesh, Karnataka).

MATERIAL EXAMINED
India: Karnataka, adults and larvae on *Ficus* sp. (BMNH).

Macrohomotoma gladiata Kuwayama

(Figs 18, 19, 60, 108)

Macrohomotoma gladiatum Kuwayama, 1907: 180; Crawford, 1911: 490; 1914: 63; 1925*a*: 37; [1928: 425, misidentification]; Aulmann, 1913: 36; Enderlein, 1914: 233; 1921: 119; Kuwayama, 1922: 368; 1931: 125; Boselli, 1930: 178; Miyatake, 1965*a*: 173; Mathur, 1975: 135; Hodkinson, 1983: 352. Holotype ♀, TAIWAN (EIHU) [not examined].

Macrohomotoma gladiata Kuwayama; Yang, 1984: 157.

[*Macrohomotoma striata* Crawford; Hill & Cheung, 1978: 51; Hill et al., 1982: 175. Misidentifications.]

HOSTPLANT. *Ficus microcarpa* (many records as *F. retusa*).

RECORDED DISTRIBUTION. Japan (Ryukyu Is), Taiwan. Crawford's (1928) record of this species from Sumatra is erroneous as a male bearing Crawford's determination label in BMNH represents a different species.

MATERIAL EXAMINED
Hong Kong: adults on *Ficus microcarpa*; adults and larvae on *F.* ? *benghalensis*. (BMNH).

Macrohomotoma hylocola Yang & Li

Macrohomotoma hylocola Yang & Li, 1984*b*: 376, 380; Hodkinson, 1986: 316. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].

HOSTPLANT. *Ficus* sp.

RECORDED DISTRIBUTION. China: Yunnan.
No material examined.

Macrohomotoma maculata Mathur

Macrohomotoma maculata Mathur, 1975: 140; Hodkinson, 1986: 316. Holotype ♀, INDIA: on *Santalum album* (FRI) [not examined].

HOSTPLANT. The type series was probably vagrant on the recorded host.

RECORDED DISTRIBUTION. India: Tamil Nadu, Karnataka.

MATERIAL EXAMINED
India: 1 ♂, 2 ♀, Tamil Nadu (same locality as holotype, BMNH).

Macrohomotoma magna Yang & Li

Macrohomotoma magna Yang & Li, 1984*b*: 375; Hodkinson, 1986: 316. Holotype ♀, CHINA: on *Ficus* sp. (BAUIC) [not examined].

Macrohomotoma magne Yang & Li, 1984*b*: 380. [Misspelling.]

HOSTPLANT. *Ficus* sp.

RECORDED DISTRIBUTION. China: Yunnan.
No material examined.

Macrohomotoma minana Yang & Li

Macrohomotoma minana Yang & Li, 1984*b*: 373, 380; Hodkinson, 1986: 316. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].

HOSTPLANT. *Ficus* sp.

RECORDED DISTRIBUTION. China: Fujian.
No material examined.

Macrohomotoma robusta Yang

Macrohomotoma robusta Yang, 1984: 160; Hodkinson, 1986: 316. Holotype ♂, TAIWAN: on *Ficus benjamina* (NCHU) [not examined].

HOSTPLANT. *Ficus benjamina*.

RECORDED DISTRIBUTION. Taiwan.
No material examined.

Macrohomotoma sandakana Crawford

[*Pauropsylla apsylloides* Crawford, 1919: 144. Misidentification, in part.]
Macrohomotoma sandakana Crawford, 1925*a*: 38; Hodkinson, 1983: 352. Holotype ♂, EAST MALAYSIA (USNM) [not examined].

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. East Malaysia: Sabah.
No material examined.

Macrohomotoma sinica Yang & Li

Macrohomotoma sinica Yang & Li, 1984*b*: 371, 379; Hodkinson, 1986: 316. Holotype ♂, CHINA: on *Ficus* spp. (BAUIC) [not examined].

HOSTPLANT. *Ficus microcarpa* (as *F. retusa*), *Ficus* sp., ? *F. microphylla* [not listed by Corner (1965)].

RECORDED DISTRIBUTION. China: Fujian.
No material examined.

Macrohomotoma striata Crawford

Macrohomotoma striata Crawford; Ramakrishna Ayyar, 1924: 622, nomen nudum.
Macrohomotoma striata Crawford, 1925*a*: 38; [Miyatake, 1965*a*: 174, ? misidentification]; Mathur, 1975: 144; Hodkinson, 1983: 352; 1986: 316. Holotype ♀, INDIA: on *Ficus* sp. (? USNM) [not examined].

HOSTPLANT. *Ficus* sp.; Miyatake's (1965a) record of this species from the Ryukyu Is on *F. microcarpa* (as *F. retusa*) is probably a misidentification.

RECORDED DISTRIBUTION. India: Karnataka. Japan: Ryukyu Is [possible misidentification by Miyatake (1965*a*)].
No material examined.

Macrohomotoma viridis Yang & Li

Macrohomotoma viridis Yang & Li, 1984*b*: 377, 380; Hodkinson, 1986: 317. Holotype ♀, CHINA: on *Ficus* sp. (BAUIC) [not examined].

HOSTPLANT. *Ficus* sp.

RECORDED DISTRIBUTION. China; Yunnan.
No material examined.

Macrohomotoma williamsi Crawford

Macrohomotoma williamsi Crawford, 1925*a*: 37; Hodkinson, 1983: 352. Syntypes, ♂ and ♀, PHILIPPINES: on *Ficus clementis* (USNM) [2 ♀ examined].

HOSTPLANT. *Ficus crassiramea* var. *clementis*.

RECORDED DISTRIBUTION. Philippines.

MATERIAL EXAMINED
Philippines: 2 ♀ syntypes (USNM).

Macrohomotoma yunana Yang & Li

Macrohomotoma yunana Yang & Li, 1984*b*: 374, 380; Hodkinson, 1986: 317. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].

HOSTPLANT. *Ficus* sp.

RECORDED DISTRIBUTION. China: Yunnan.
No material examined.

PSEUDOERIOPSYLLA Newstead

Pseudoeriopsylla Newstead, 1911: 105; Yang & Li, 1984*b*: 370 (as a synonym of *Macrohomotoma*); White & Hodkinson, 1985: 242. Type species: *Pseudoeriopsylla nyasae* Newstead, by monotypy.
Pseuderiopsylla Newstead; Crawford, 1914: 62 (as a synonym of *Macrohomotoma*). [Misspelling.]

DESCRIPTION. Large psyllids, up to 8.0 mm long. Integument of head and thorax sparsely covered with very short setae. Head (Figs 20, 21), from above, almost as wide as mesoscutum; disc of vertex concave with foveae weakly defined, anterior and lateral margins rounded, occipital margin angular, lateral ocelli not on raised tubercles, median ocellus just visible from above, anterolateral tubercles absent; antennal sockets not enlarged and head without cleft appearance, antennal scape not enlarged or elongate; flagellum filiform, 1.0–1.7 times longer than head

width, rhinaria present on flagellomeres 2–7 (Figs 32–37); (sometimes absent from 5); genae slightly swollen ventrally; ultimate rostral segment short, 2.0–4.0 times longer than wide.

Thorax, in profile, moderately arched; pronotum narrowly visible from above and descending vertically behind occiput; forewing (Figs 61, 62) ovate, with subacute apex, 2.15–2.45 times longer than wide, veins bearing sparse short setae, *C+Sc* slightly thickened proximally, costal break absent, well-defined subcircular pterostigma present, apex of M_{1+2} reaching wing margin posterior to wing apex, *Cu* stem much shorter than *M+Cu* stem, m_1 cell value 1.5–1.9, cu_1 cell value 0.7–1.2, apex of claval suture adjacent to apex of Cu_{1b}, radular areas well-defined; basal spine of hind tibia present, apical spurs arranged 0 + 4, hind basitarsus with 2 apical spurs.

♂ proctiger bipartite, lateral lobes well-developed, each with a small inner apical lobe; aedeagus 2-segmented, basal segment not swollen.

♀ terminalia conical, anal pore ring convoluted.

Larva. Anus and associated wax pores terminodorsal (Figs 109–112).

HOSTPLANTS. *Ficus* (*Urostigma*) sect. *Galoglychia*.

COMMENTS. Crawford (1914) considered this genus to be synonymous with *Macrohomotoma* but White & Hodkinson (1985) regarded the two as distinct. Although clearly a sister-pair there are good characters in both larvae and adults that separate the two genera (see key couplet 8, p. 141).

Until recently *Pseudoeriopsylla* was thought to be monobasic but a critical examination of the available material has revealed a complex of at least six species in tropical Africa. These are differentiated and described below.

Key to species of *Pseudoeriopsylla*

1 Rhinaria present over whole surface of 1st flagellomere (Figs 33–35) 2

– Rhinaria present only apically or subapically on 1st flagellomere (Figs 32, 36, 37) 4

2 Rhinaria present over whole lengths of flagellomeres 2–5 (Fig. 35); ♂ paramere (Fig. 96) obliquely truncate apically; ♀ proctiger not less than 1.4 times longer than head width..... ***carvalhoi***

– Rhinaria present only subapically on flagellomeres 2–5 (Figs 33, 34); ♂ paramere (Figs 93, 95) rounded apically; ♀ proctiger not more than 1.3 times longer than head width 3

3 ♂ paramere (Fig. 95) narrow, thumb-like, anterior tubercle on inner surface hook-like..... ***medleri***

– ♂ paramere (Fig. 93) broader, anterior tubercle on inner surface truncate..... ***laingi***

4 ♂ paramere (Fig. 92) conical, with a subacute apical tubercle; 1st and 2nd flagellomeres with several rhinaria subapically (Fig. 32) ..... ***nyasae***

– ♂ paramere thumb-shaped (Figs 97, 98), with two tubercles on inner surface subapically; 1st and 2nd flagellomeres each with a single subapical rhinarium (Figs 36, 37)..... 5

5 Antennal flagellum not less than 1.4 times longer than head width; ♂ paramere broad (Fig. 97) ***kenyae***

– Antennal flagellum not more than 1.25 times longer than head width; ♂ paramere narrow (Fig. 98) ***etiennei***

Pseudoeriopsylla nyasae Newstead

(Figs 32, 92, 109)

Pseudoeriopsylla nyasae Newstead, 1911: 105; Yang & Li, 1984*b*: 369; White & Hodkinson, 1985: 162. Syntypes ♀ and larvae, MALAWI: on *Ficus* sp. (larvae BMNH, ♀ not traced) [examined].

Macrohomotoma nyasae (Newstead) Crawford, 1914: 63; 1920: 354; 1925*a*: 36; Enderlein, 1921: 119.

HOSTPLANT. Subsect. *Chlamydodorae*, *Ficus thonningii* (some records as *F. petersii*). The type series was recorded from 'Kachire' which, according to Binns (1972), is a vernacular name used for *Ficus natalensis*, *F. thonningii*, and *F. scassellatii* (=*F. kirkii*).

RECORDED DISTRIBUTION. Malawi, Mozambique.

MATERIAL EXAMINED

Adults and larvae from: **South Africa** (Tvl), on '*F. petersii*'; Malawi, Tanzania, Zaire.

Pseudoeriopsylla laingi sp. n.

(Figs 20. 21, 33, 61, 93, 94, 110)

DESCRIPTION. Antennal flagellum 1.46–1.70 (♂) and 1.19–1.28 (♀) times longer than head width; rhinaria present over most of surface of 1st flagellomere, 3 subapically on 2nd (Fig. 33), 0–2 subapically on 3rd, 1–2 subapically on 4th, none on 5th, 3–4 subapically on 6th, 2 subapically on 7th, 8th bearing 2 subequal setae apically; ultimate rostral segment 2.5–3.0 times longer than wide.

Forewing 2.20–2.45 times longer than wide, pattern dimorphic (as in Figs 61, 62); m_1 cell value

1.5–1.7, cu_1 cell value 0.7–1.1 (higher in W. African populations).

♂ paramere (Fig. 93) broad in profile, rounded apically, inner surface with 2 subapical tubercles, the anterior one truncate apically; apical segment of aedeagus as in Fig. 94.

♀ proctiger 1.20–1.27 times longer than head width.

Measurements (6 ♂, 5 ♀). Maximum width of head, ♂ 0.97–1.12, ♀ 1.06–1.20; length of antennal flagellum, ♂ 1.42–1.88, ♀ 1.30–1.42; length of ultimate rostral segment, ♂ 0.16–0.19, ♀ 0.15–0.20; length of forewing, ♂ 4.12–5.95, ♀ 4.80–6.68; length of hind tibia, ♂ 0.88–1.10, ♀ 0.92–1.10; length of ♀ proctiger, 1.28–1.52.

Larva. Dorsal and ventral caudal plates and circum-anal pore ring as in Fig. 110.

HOSTPLANT. Subsect. *Chlamydodorae*; *Ficus thonningii*, *F. natalensis* .

Holotype ♂, **Angola**: Chianga, 12.iv.1975, on *Ficus thonningii* (*van Harten*) (BMNH); dry-mounted.

Paratypes. **Angola**: 5 ♂, 8 ♀, larvae, same data as holotype; 1 ♀, i.1971 (*van Harten*); 1 ♀, 21–24.iii.1972 (*Hollis*); 2 ♂, 2 ♀, 27.viii.1973 (*Amorim*). **Kenya**: 2 ♂, 5 ♀, larvae, Nairobi, Chiromo, ix.1970, *Ficus* sp. (*Schmutterer*). **Uganda**: 1 ♂, Kampala, 'Makawkawe', 9.iii.1925 (*Hamwer*); 1 ♂, 3 ♀, larvae, Kawanda Res. Stn, 10.vi.1988, on roots of *Ficus natalensis* (*Polaszek*). Cameroon: 1 ♀, Bamenda, c̄ 5000′, 26-31.i.1957, yellow tray; 1 ♂, ii.1957 (*Eastop*). **Nigeria**: 1 ♂, 5 ♀, Lagos (*Brown*). **Sierra Leone**: larvae, Freetown, 27.viii.1924; 1 ♂, 2 ♀, 20.i.1927; 2 ♂, 2 ♀, Newton, 10.xi.1928, *Ficus sp.* (*Hargreaves*). **Guinea**: 1 ♂, Kindia, Fulaya, 4.ii.1952, 'Goyavier' (*Balachowsky*). **Senegal**: larvae, Djibelor, 15.xii.1981, *Ficus* sp.; 1 ♂, 1 ♀, 14.iii.1982, beating trees (*Etienne*). (BMNH; MNHN).

COMMENTS. This species appears to be close to *medleri* and *nyasae* and replaces the latter on the same host from Kenya northwards and westwards.

Dr A. Polaszek (pers. comm.) has reared specimens of *Psyllaephagus secus* Prinsloo (Chalcidoidea: Encyrtidae) and *Dilyta* sp. (Cynipoidea: Charipidae) from 5th instar larvae of the population from Kawanda Res. Stn, Uganda, mentioned in the above paratype series.

Pseudoeriopsylla medleri sp. n.

(Figs 34, 95)

DESCRIPTION. Antennal flagellum 1.32–1.41 (♂) and 1.14–1.16 (♀) times longer than head width; rhinaria present over most of surface of 1st flagellomere (Fig. 34), 6 subapically on 2nd, 1–3 subapically on 3rd, 1–2 subapically on 4th, 1 apically on 5th, 3 subapically on 6th, 2 apically on 7th, 8th bearing 2 subequal setae apically; ultimate rostral segment 2.3–3.1 times longer than wide.

Forewing pattern similar to that in Fig. 62, 2.18–2.34 times longer than wide, m_1 cell value 1.6–1.9, cu_1 cell value 1.13–1.19; hindwing 0.5 times as long as forewing.

♂ paramere (Fig. 95) narrow in profile, rounded apically, inner surface with 2 subapical tubercles, the anterior one hook-like.

♀ proctiger 1.2 times longer than head width.

Measurements (4 ♂, 2 ♀). Maximum width of head, ♂ 0.91–0.98, ♀ 1.02; length of antennal flagellum, ♂ 1.20–1.38, ♀ 1.16–1.18; length of ultimate rostral segment, ♂ 0.12–0.14, ♀ 0.13; length of forewing, ♂ 4.28–4.64, ♀ 4.72–4.76; length of hind tibia, ♂ and ♀ 0.86–0.88; length of ♀ proctiger, 1.20–1.22.

Larva and hostplant unknown.

Holotype ♂, **Nigeria**: S. E. State, Oban, 7.iv.1975 (*Medler*) (BMNH); dry-mounted.

Paratypes. **Nigeria**: 13 ♂, 4 ♀, same data as holotype (BMNH); slide- and dry- mounted.

COMMENTS. *P. medleri* appears to be close to *laingi* but is distinguished by the structure of the ♂ paramere.

Pseudoeriopsylla carvalhoi sp. n.

(Figs 35, 96)

DESCRIPTION. Antennal flagellum 1.35–1.67 (♂) and 1.14–1.41 (♀) times longer than head width; rhinaria present over most of surfaces of flagellomeres 1–5 (Fig. 35), 4–6 subapically on 6th, 2 apically on 7th, 8th with 2 subequal setae apically; ultimate rostral segment 3.5–4.0 times longer than wide.

Forewing pattern similar to that in Fig. 61, often with hind margin also brown, 2.20–2.41 times longer than wide, m_1 cell value 1.7, cu_1 cell value 0.9; hindwing 0.54–0.58 times as long as forewing.

♂ paramere (Fig. 96) with obliquely truncate apex, inner surface with 1 hook-like anterodorsal and 1 simple posterodorsal tubercle.

♀ proctiger long, 1.42–1.77 times longer than head width.

Measurements (2 ♂, 2 ♀). Maximum width of head, ♂ 0.90–0.92, ♀ 1.00–1.06; length of antennal flagellum, ♂ 1.22–1.54, ♀ 1.14–1.50; length of ultimate rostral segment, ♂ 0.15–0.16, ♀ 0.16–0.17; length of forewing, ♂ 3.80–3.96, ♀ 4.42–4.72; length of hind tibia, ♂ 0.82–1.02, ♀ 0.82–1.14; length of ♀ proctiger, 1.42–1.88.

Larva unknown.

HOSTPLANT. Subsect. *Caulocarpae*, *Ficus ovata* (=*F. brachypoda*).

Holotype ♂, **Angola**: Duque de Braganca Falls, 11–12.iii.1972, *Ficus brachypoda* (*Hollis*) (BMNH); dry-mounted.

Paratypes. **Angola**: 4 ♂, 5 ♀, same data as holotype (BMNH). **Zaire**: 6 ♂, 4 ♀, P. N. G., Miss. H. De Saeger, Iso II/9, 17.vi.1952 (3638); 3 ♂, 4 ♀, Mt Tungu (S), 9.vi.1952 (*De Saeger* 3606) (MRAC; BMNH). **Nigeria**: 1 ♀, Zaria, Samaru, 26.iii.1966, m.v. trap (*Deeming*) (BMNH). Slide- and dry-mounted.

COMMENTS. *P. carvalhoi* differs from the other known species of the genus in the extreme proliferation of rhinaria on the antennal flagellum and the elongate female proctiger. The host species also belongs to a different subsection of Sect. *Galoglychia*.

Pseudoeriopsylla kenyae sp. n.

(Figs 36, 97, 111)

DESCRIPTION. Antennal flagellum 1.53–1.57 (♂) and 1.38 (♀) times longer than head width; a single apical rhinarium present on 1st flagellomere, 1 on 2nd (Fig. 36), 0–1 on 3rd, 1–2 on 4th, none on 5th, 1–2 on 6th, a double rhinarium on 7th, 8th with 2 subequal setae apically; ultimate rostral segment 3.0–3.6 times longer than wide.

Forewing pattern as in Fig. 61, 2.25–2.36 times longer than wide, m_1 cell value 1.7, cu_1 cell value 1.2; hindwing 0.55–0.57 times as long as forewing.

♂ paramere (Fig. 97) broad in profile, with rounded apex, inner surface with 1 subapical anterior tubercle and 1 posteroapical tubercle.

♀ proctiger 1.2 times longer than head width.

Measurements (2 ♂, 1 ♀). Maximum width of head, ♂ 1.08–1.10, ♀ 1.10; length of antennal flagellum, ♂ 1.68–1.70, ♀ 1.52; length of ultimate rostral segment, ♂ 0.18–0.19, ♀ 0.18; length of forewing, ♂ 4.72–4.80, ♀ 5.13; length of hind tibia, ♂ 1.14–1.20, ♀ 1.12; length of ♀ proctiger, 1.32.

Larva. Dorsal and ventral caudal plates and circum-anal pore ring as in Fig. 111.

HOSTPLANT. *Ficus sp.*

Holotype ♂, **Kenya**: L. Naivasha, W. shore road, c̄ 6,200′, 21–22.vi.1974, *Ficus* sp. (*Hollis*) (BMNH); dry-mounted.

Paratypes. **Kenya**: 1 ♂, 3 ♀, larvae, same data as holotype; 1 ♂, 2 ♀, Nairobi, Karen, c̄ 5,500′, 7.vii.1974, *Clausena anisata* (*Hollis*) (BMNH); slide- and dry- mounted.

COMMENTS. *P. kenyae* and *etiennei* differ from other species of the genus in the lack of multiple rhinaria on the first two flagellomeres. They differ from one another in the relative lengths of the antennal flagellum and the form of the male paramere.

Pseudoeriopsylla etiennei sp. n.

(Figs 37, 62, 98, 112)

DESCRIPTION. Antennal flagellum 1.17–1.24 (♂) and 1.0 (♀) times longer than head width; a single apical rhinarium on 1st flagellomere, 1 on 2nd (Fig. 37), none on 3rd, 1 on 4th, none on 5th, 1 on 6th, a double rhinarium apically on 7th, 8th with 2 subequal setae apically; ultimate rostral segment short, 2.0 times longer than wide.

Forewing (Fig. 62) 2.15–2.31 times longer than wide, m_1 cell value 1.9, cu_1 cell value 1.05; hindwing 0.5 times as long as forewing.

♂ paramere (Fig. 98) narrow in profile, with rounded apex, inner surface with a bifid tubercle anteroapically.

♀ proctiger 1.2 times longer than head width.

Measurements (2 ♂, 2 ♀). Maximum width of head, ♂ 1.08–1.16, ♀ 1.20–1.24; length of antennal flagellum, ♂ 1.34–1.36, ♀ 1.20–1.24; length of ultimate rostral segment, ♂ and ♀, 0.12; length of forewing, ♂ 4.81–4.89, ♀ 5.09–5.30; length of hind tibia, ♂ 0.94, ♀ 0.96–1.02; length of ♀ proctiger, 1.4–1.5.

Larva. Dorsal and ventral caudal plates and circum-anal pore ring as in Fig. 112.

HOSTPLANT. *Ficus* sp.

Holotype ♂, **Senegal**: Kamobeul-Essyhl, 27.xi.1982, *Ficus* sp. (*Etienne*) (MNHN); slide-mounted.

Paratypes. **Senegal**: 1 ♂, 2 ♀, larvae, same data as holotype (BMNH); slide-mounted.

HOMOTOMINAE Heslop-Harrison

Homotomini Heslop-Harrison, 1958: 577, in part.
Homotominae Bekker-Migdisova, 1973: 101, in part; White & Hodkinson, 1985: 272.
Carsidarinae Yang, 1984: 168, in part.

DIAGNOSIS. Antennal flagellum thickened and densely setose; in forewing costal break present or at least indicated by a weakly sclerotised area of the cuticle in the break area, pterostigma absent.

The subfamily comprises two tribes, the Homotomini with an Old World distribution, and the Synozini with a New World distribution.

HOMOTOMINI Heslop-Harrison

Homotomini Heslop-Harrison, 1958: 578, in part; Loginova, 1964*b*: 54.

Dynopsyllini Bekker-Migdisova, 1973: 102, in part.

Psausiini Bekker-Migdisova, 1973: 102. Type genus: *Psausia* Enderlein. **Syn. n.**

DIAGNOSIS. In forewing *M+Cu* stem present, sometimes immediately adjacent to *R+M+Cu* stem and *R* stem, radular area present in cell m_2; hind tibia with only part of apical spur ring thickened; ♂ proctiger bipartite, basal segment of aedeagus strongly expanded in apical half.

A single, Old World genus, *Homotoma,* is recognised, with hostplants in *Ficus* (*Urostigma*) sects *Urostigma, Conosycea* and *Galoglychia,* and *Ficus* (*Ficus*) sects *Ficus* and *Rhizocladus.*

HOMOTOMA Guérin-Méneville

Homotoma Guérin-Méneville, 1844: 376; Flor, 1861: 337, 412; Löw, 1879: 607; Kieffer, 1905: 161; Kuwayama, 1908: 181; Crawford, 1911: 483; 1915: 262; 1919: 162; Aulmann, 1913: 35; Enderlein, 1921: 118; Boselli, 1929: 218; Kuwayama, 1931: 124; Haupt, 1935: 252; Schaefer, 1949: 56; Ramirez Gomez, 1956: 65; Heslop-Harrison, 1958: 578; Dobreanu & Manolache, 1962: 364; Miyatake, 1975: 17; Braza & Calilung, 1981: 353; Yang & Li, 1981: 77, 84; 1984*a*: 201, 217; Hodkinson, 1983: 349; 1986: 312. Type species: '*Psylla ficus*' Linnaeus, by original designationand monotypy.

Anisostropha Foerster, 1848: 92; Frauenfeld, 1867: 804; Meyer-Dür, 1871: 403. Type species: *Chermes ficus* Linnaeus, by monotypy. [Objective synonym of *Homotoma.*]

Psausia Enderlein, 1914: 232; 1921: 120; Heslop-Harrison, 1949: 376, 378; 1958: 578; Mathur, 1975: 155; Yang & Li, 1981: 78, 85; 1984*a*: 217; Hodkinson, 1983: 349; 1986: 312; Yang, 1984: 168; Kandasamy, 1987: 72. Type species: *Homotoma radiata* Kuwayama, by original designation and monotypy. [Synonymised with *Homotoma* by Kuwayama, 1931: 124.]

Labobrachia Enderlein, 1921: 119; Heslop-Harrison, 1949: 376, 378; 1958: 578; Hodkinson, 1983: 349; 1986: 312; Yang & Li, 1984*a*: 201, 217. Type species: *Homotoma pacifica* Crawford, by original designation and monotypy. [Synonymised with *Homotoma* by Hodkinson, 1983: 349.]

Metapsausia Enderlein, 1921: 120; Heslop-Harrison, 1949: 376, 378; 1958: 578; Yang & Li, 1981: 79, 85; 1984*a*: 202; Hodkinson, 1983: 349; 1986: 312. Type species: *Homotoma bakeri* Crawford, by original designation. [Synonymised with *Homotoma* by Hodkinson, 1983: 349.]

Caenohomotoma Yang & Li, 1981: 78, 85. Type species: *Caenohomotoma spiraea* Yang & Li, by original designation. [Synonymised with *Homotoma* by Hodkinson, 1986: 312.]

Austrohomotoma Yang & Li, 1981: 78, 85. Type species: *Homotoma gressitti* Miyatake, by monotypy. [Synonymised with *Homotoma* by Hodkinson, 1986: 312.]

Harrisonella Yang & Li, 1981: 78, 85. Type species: *Homotoma distincta* Crawford, by monotypy. [Synonymised with *Homotoma* by Hodkinson, 1986: 312.]

Heterohomotoma Yang & Li, 1981: 78, 85. No type species designated. Nomen nudum.

Labobracha Yang & Li, 1984*a*: 217. [Misspelling.]

Psausia Yang & Li, 1984*a*: 217 (nec Enderlein). Type species: *Homotoma distincta* Crawford, by original designation and monotypy. [Homonym of *Psausia* Enderlein, objective synonym of *Harrisonella,* and syn. n.]

Australohomotoma Hodkinson, 1986: 312. [Misspelling.]

DESCRIPTION. Medium- to large-sized psyllids, up to 6.5 mm. Integument of head and thorax densely covered with long setae. Head (Figs 22–24), from above, about as wide as mesoscutum; vertex from shallowly to deeply concave, anterior margin rounded and often deeply incised by median suture, lateral margins rounded or obtuseangular, occipital margin angular, median ocellus just visible from above, lateral ocelli on weak swellings, anterolateral tubercles absent, antennal sockets enlarged and giving head a cleft appearance; antennal flagellum (Figs 38–40) swollen and densely hirsute, rounded or flattened in cross-section, a single apical rhinarium present on flagellomeres 2, 4, 6 and 7, flagellomere 8 very reduced and less than half length of 7; genae normally slightly swollen ventrally, small genal cones rarely developed; ultimate rostral segment short, up to twice as long as wide.

Thorax, in profile, from weakly to strongly arched; pronotum broadly visible from above, sometimes with a pair of anteromedial and a pair of anterolateral projections. Forewing (Figs 63–73) of variable shape, veins bearing long setae, *C+Sc* usually thickened basally, costal break present or indicated by weakening of cuticle in break area, *M* stem often partially fused with basal part of *Rs* and M_{1+2} and sometimes partially fused with apical part of *Rs,* apex of M_{1+2} reaching wing margin anterior to wing apex or at wing apex, *Cu*

stem short or long, cells m_1 and cu_1 of very variable shape, apex of claval suture adjacent to or shortly distant from apex of Cu_{1b}, radular areas from diffuse to sharply defined but always present in cell m_2; basal spine of hind tibia rarely present, apical spurs arranged 0 + 4–7; hind basitarsus with 2 or rarely 1 apical spurs.

♂ proctiger bipartite, lateral lobes well-developed and with inner apical lobes; basal segment of aedeagus swollen in apical half, apical segment without ventral spiniform processes apically (Figs 99–104).

♀ terminalia conical, circum-anal pore ring simple.

Larva. Body form variable, wider than long in *H. ficus,* longer than wide in other known species. Antennae short, flagellum not subdivided except for flagellomeres 7 and 8; dorsal thoracic sclerites differentiated, separate; humeral lobes well-developed in *ficus* but not in other known species; body surface covered with lanceolate setae, in *ficus* these are mounted on elongate tubercles (White & Hodkinson, 1985), in other species these tubercles are smaller or absent; pointed sectasetae present marginally; anus ventral and with a large, medially constricted circum-anal pore ring. [Larvae are described or figured for *distincta* (Heslop-Harrison, 1949), *ficus* (Boselli, 1929), *galbvittata* (Yang & Li, 1984*a*), *indica* (Mathur, 1975), *maculata* (Yang, 1984), *radiata* (Fang & Yang, 1986) and *wulinensis* (Yang, 1984).]

Comments. The synonymy of *Homotoma* has become confused since Enderlein erected the genera *Psausia, Metapsausia* and *Labobrachia,* based on type species previously described in *Homotoma.* Kuwayama (1931) synonymised *Psausia* with *Homotoma* but Heslop-Harrison (1949) recognised all four genera as distinct, and Mathur (1975) and Yang (1984) regarded *Psausia* as distinct. Miyatake (1975) included the type species of Enderlein's genera in his treatment of *Homotoma,* but it is likely that he was following Kuwayama in the synonymy of *Psausia* and was unaware of Enderlein's (1921) paper erecting *Metapsausia* and *Labobrachia.* However, Hodkinson (1983) considered that Miyatake had effectively synonymised Enderlein's genera with *Homotoma.* This confusion was further compounded by Yang & Li (1981, 1984*a*) when they erected a further five genus-group names in the *Homotoma* complex, including one that is both a homonym and an objective synonym, and another that is a nomen nudum. Hodkinson (1986) considered Yang & Li's names to be invalid and further suggested that there was no good reason for splitting *Homotoma.*

Enderlein (1914, 1921) based his genera on venational characters and Heslop-Harrison supported these arguments, adding further structural characters to support the separation of *Psausia.* The various forewing types may be characterised as follows:

1 M_{1+2} reaching wing margin at apex of wing (Figs 64, 65) [Primitive condition for Carsidaridae + Homotomidae] ..... **'Labobrachia' type**

– M_{1+2} reaching wing margin anterior to wing apex (Figs 63, 66–73) 2

2 $M+Cu$ stem entirely separated from R stem, M stem entirely separated from Rs, apex of claval suture adjacent or close to apex of Cu_{1b}, radular areas diffuse (Figs 63, 66–70) ..... **'Homotoma' type**

– $M+Cu$ stem partly or entirely fused with R stem, M stem partly or entirely fused with Rs, apex of claval suture distant from apex of Cu_{1b}, radular areas defined (Figs 71–73) 3

3 M stem partly fused with Rs, M_{1+2} entirely separate from Rs (Figs 71, 72) ..... **'Psausia' type**

– M stem almost or completely fused with Rs, M_{1+2} completely fused with Rs (Fig. 73) **'Metapsausia' type**

Assuming the 'Labobrachia' type to be the primitive forewing condition, transformation series can be defined through the 'Homotoma' type to the Afrotropical species (Figs 63, 66–70) in one series, and to 'Psausia' types (Figs 71, 72) and 'Metapsausia' types (Fig. 73) in another series. It is even possible to derive the condition found in the South American genus *Synoza* (Fig. 74) from the 'Psausia' type. One could reasonably argue that the 'Psausia' type was uniquely derived from the 'Homotoma' type, but the 'Metapsausia' type could have arisen several times from the 'Psausia' type.

The supporting morphological characters used by Heslop-Harrison (1949) to separate *Psausia* from *Homotoma* are unlikely to be useful but the pronotum of those species with the 'Psausia' and 'Metapsausia' types of forewing, that we have examined, have anterodorsal and anterolateral projections. In those species with the 'Labobrachia' and 'Homotoma' types the pronotum is a more simple, strap-like tergite. The male genitalia of all specimens examined show no significant differences that would support Enderlein's generic concepts. We are, therefore, following Hodkinson (1983, 1986) in recognising a single genus, *Homotoma.*

Thirty-one species are currently recognised, including four newly described below from the Afrotropical Region. All these species are listed

below on a regional basis; a key is not provided as many of the descriptions are inadequate and we have been unable to obtain type material.

Palaearctic Region

Homotoma ficus (Linnaeus)

'Les faux pucerons du figuier' Reaumur, 1737: 351.

'La Psylle du figuier' Geoffroy, 1762: 484.

Chermes ficus Linnaeus, 1758: 455; Fabricius, 1794: 223.

Psylla ficus (Linnaeus) Tigny, 1802: 165; Latreille, 1804: 379; Audinet-Serville, 1825: 229; Dufour, 1833: 232; Amyot & Serville, 1843: 593.

Homotoma ficus (Linnaeus) Guérin-Méneville, 1844: 376; Flor, 1861: 413; Girard, 1876: 132; Bolivar & Chicote, 1879: 185; Ferrari, 1888: 76; Lambertie, 1901: 221; Dominique, 1902: 225; Ragusa, 1907: 237; Oshanin, 1907: 369; 1912: 128; Aulmann, 1913: 35; Horvath, 1918: 331; Boselli, 1929: 218; Bodenheimer & Theodor, 1929: 35; Silvestri, 1934: 382; Balachowski & Mesnil, 1935: 586; Haupt, 1935: 252; Heslop-Harrison, 1946: 37; 1949: 375; Schaefer, 1949: 56; Vondráček, 1951: 26; Tamanini, 1955: 11; 1966: 105; Ramirez Gomez, 1956: 66; Wagner & Franz, 1961: 170; Klimaszewski, 1961: 115; 1973: 230; Dobreanu & Manolache, 1962: 364; Loginova, 1964*a*: 472; Hodkinson & White, 1979: 77; White & Hodkinson, 1982: 45; Halperin et al., 1982: 34; Burckhardt, 1983: 64; Andrianova & Klimaszewski, 1983: 42; Yang & Li, 1984*a*: 201, 217.

Anisostropha ficus (Linnaeus) Foerster, 1848: 92; Frauenfeld, 1867: 801; Meyer-Dür, 1871: 403.

HOSTPLANT. *Ficus carica*; ((*Ficus*) sect. *Ficus*).

RECORDED DISTRIBUTION. Widespread in Mediterranean Basin, also from Albania, Austria, France, Iran, U. S. S. R. (Caucasus and Crimea), (England and North America, introduced).

MATERIAL EXAMINED

Numerous adults and larvae from various localities in the **Mediterranean Basin, England** (BMNH).

Homotoma viridis Klimaszewski

Homotoma viridis Klimaszewski, 1961: 114; 1973: 231; 1975: 18, 30, 37; Tamanini, 1966: 105; Loginova, 1968: 326; Halperin et al., 1982: 35; Burckhardt, 1983: 64; 1988: 40; Andrianova & Klimaszewski, 1983: 43; Yang & Li, 1984*a*: 201, 217. Holotype ♂, ALBANIA (IZPAN) [not examined].

HOSTPLANT. *Ficus carica*.

RECORDED DISTRIBUTION. Bulgaria, Israel, Italy, Spain, Tunisia, Turkey, U. S. S. R. (Caucasus and Crimea), Yugoslavia.

COMMENTS. The morphological differentiation of this species from *H. ficus* has a weak basis. Furthermore, both have been collected at the same time and locality, from the same host individual, and there is no biological evidence that the species are distinct.

Afrotropical Region

The four new species described below are the first records of the genus in this region. They are distinguished by their wing shape, venation and coloration and by the structure of the antennal flagellum.

Homotoma angolensis sp. n.

(Figs 22, 23, 39, 63, 99, 100)

DESCRIPTION. Dark brown psyllids with a beetle-like appearance, 3.0–3.5 mm long. Head (Figs 22, 23) with vertex flat, anterior margin weakly incised by median suture; antennal flagellum 1.9–2.0 (♂) and 1.6–1.8 (♀) times longer than head width, laterally flattened and expanded (Fig. 39), 1st flagellomere almost 3 times as long as wide, 8th flagellomere with one long pointed seta and one very short and truncate seta apically; genae with weak, conical swellings ventrally; ultimate rostral segment 2.0–2.5 times longer than wide.

Thorax weakly arched, pronotum without anterior projections; forewing (Fig. 63) coriaceous, obovate with rounded apex, 2.2–2.4 times longer than wide, veins densely clothed with long sinuous setae, *M* stem and branches entirely separated from *R* stem and branches, *M* stem short, m_l value 2.0–2.4, *Cu* stem about as long as *M*+*Cu* stem, cu_l value about 0.9, apex of claval suture adjacent to apex of Cu_{1b}, radular areas diffuse; hindwing relatively long, 0.85 times as long as forewing, *M* unbranched, *Cu* branched apically; basal spine of hind tibia absent, apical spurs arranged 0 + 5; hind tibia with 2 apical spurs.

♂ proctiger (Fig. 99) with lateral lobes of basal segment well-developed, anal tube of moderate length; aedeagus (Fig. 99) with basal segment weakly expanded in apical half; inner surface of paramere (Fig. 100) with a well-developed anteromedial pointed tubercle and a diagonal ridge lying anteromedially to posteroapically.

♀ terminalia short, conical; proctiger 1.1 times longer than head width.

Measurements (5 ♂, 4 ♀). Maximum width of head, ♂ 0.62–0.67, ♀ 0.70–0.74; length of antennal flagellum, ♂ 1.20–1.36, ♀ 1.18–1.26; length of ultimate rostral segment, ♂ 0.80–0.10, ♀ 0.10–0.11; forewing length, ♂ 2.44–2.52, ♀ 2.96–3.04; length of hind tibia, ♂ 0.56–0.60, ♀ 0.60–0.64; length of ♀ proctiger, 0.76–0.80.

Larva unknown.

Hostplant. Adults collected from *Ficus thonningii* (*(Urostigma)* sect. *Galoglychia* subsect. *Chlamydodorae*); possibly also *F. mutandifolia*.

Holotype ♂, **Angola**: Chianga, 21–24.iii.1972, *Ficus thonningii* (*Hollis*) (BMNH); dry-mounted.

Paratypes. **Angola**: 13 ♂, 7 ♀, same data as holotype; 6 ♀, 7.x.1971; 1♂, 14.i.1975, *Ficus mutandifolia* (*van Harten*); 11 ♂, 3 ♀, 7 mls W. Gabela, 16–18.iii.1972, general sweeping; 1 ♀, at light (*Hollis*). (BMNH); dry- and slide-mounted.

Comments. This species is recognised by the distinctive form, venation and chaetotaxy of the forewing. The obovate shape, and proximal branching of *M* stem and *Cu* stem of the wing are considered to be primitive features but the coriaceous nature of the membrane is unique within the genus. The structure of the antennal flagellum is highly derived in that it is short, strongly laterally flattened and with expanded flagellomeres. No obvious close relatives are known.

Homotoma bamendae sp. n.

(Figs 24, 38, 67, 101)

Description. (Only slide-mounted material available for study.) Antennal flagellum 1.73–1.97 times longer than head width, flagellomeres laterally flattened and moderately expanded (Fig. 38), 1st flagellomere 4.8 times longer than wide, 8th flagellomere with one long pointed seta and one short truncate seta apically. Vertex flat, anterior margin very weakly incised by median suture; genae produced into long thin processes ventrally (Fig. 24); ultimate rostral segment very short, 1.75 times longer than wide.

Thorax weakly arched, pronotum without anterior tubercles. Forewing obovate with subacute apex, 2.4–2.5 times longer than wide, membrane hyaline with pattern as in Fig. 67; veins bearing long straight setae, *M* stem and branches entirely separated from *R* stem and branches, *M* stem long, m_1 cell value about 1.0, *Cu* stem short, cu_1 cell value 1.6, apex of claval suture adjacent to apex of Cu_{1b}, radular areas small and poorly defined; hindwing 0.65 times as long as forewing, *M* unbranched, *Cu* apparently unbranched; basal spine of hind tibia absent, apical spurs arranged 0 + 4; hind basitarsus with 2 apical spurs.

♂ proctiger (Fig. 101) with moderately developed lateral lobes, anal tube elongate; aedeagus (Fig. 101) with basal segment expanded in apical half; inner surface of paramere with 2 anteromedial tubercles.

♀ terminalia short, conical, proctiger about as long as head width. Measurements (1 ♂, 1 ♀). Maximum width of head, ♂ 0.60, ♀ 0.68; length of antennal flagellum, ♂ 1.04, ♀ 1.34; length of ultimate rostral segment, ♂ and ♀ 0.07; length of forewing, ♂ 2.48, ♀ 3.12; length of hind tibia, ♂ 0.52, ♀ 0.62; length of ♀ proctiger, 0.71.

Larva and hostplant unknown.

Holotype ♂, **Cameroon**: Bamenda, 25–31.i. 1957, yellow trays (*Eastop*) (BMNH); slide-mounted.

Paratype. 1 ♀, same locality as holotype, 21–24.i.1957 (BMNH); slide-mounted.

Comments. The forewing venation of this species suggests a close relationship to *H. ficus* but the thin, elongate genal processes of *H. bamendae* appear to be unique in the genus.

Homotoma chlamydodora sp. n.

(Figs 68, 69, 103, 104)

Description. Overall length up to 5.0 mm. Vertex concave, anterior margin deeply incised by medial suture. Antennal flagellum 2.52–3.23 (♂) and 2.35–2.83 (♀) times longer than head width, circular in cross-section, 1st flagellomere 5.0–7.0 times longer than wide, 8th flagellomere with one long pointed seta and one short truncate seta apically; genae slightly swollen ventrally; ultimate rostral segment short, 1.5–2.0 times longer than wide.

Thorax weakly arched, pronotum broadly visible from above and without anterior tubercles. Forewing elongate-oval, with subacute apex, membrane hyaline and with a dimorphic pattern as in Figs 68, 69, 2.75–3.15 times longer than wide; veins bearing long straight setae, *M* stem and branches entirely separate from *R* stem and branches, *M* stem long, m_1 cell value 0.9, *Cu* stem about as long as *M*+*Cu* stem, cu_1 cell elongate with a value of about 2.0, apex of claval suture adjacent to apex of Cu_{1b}, radular areas diffuse; hindwing 0.75 times as long as forewing, *M* unbranched, *Cu* branching apically; hind tibia without a basal spine, apical spurs arranged 0 + 5; hind basitarsus with a single apical spur.

♂ proctiger (Fig. 103) with moderately developed lateral lobes and short anal tube; aedeagus as in Fig. 103; paramere (Fig. 104) thumb-shaped, inner surface with a single tubercle anteriorly in apical third and a posteroapical tubercle.

♀ terminalia short, conical; proctiger 0.9–1.1 times as long as head width.

Measurements (10 ♂, 9 ♀). Maximum width of head, ♂ 0.68–0.88, ♀ 0.74–0.88; length of antennal flagellum, ♂ 1.88–2.52, ♀ 1.74–2.32; length of ultimate rostral segment, ♂ 0.06–0.09, ♀ 0.07–0.08; length of forewing, ♂ 3.0–3.62, ♀ 3.08–3.88; length of hind tibia, ♂ 0.58–0.82, ♀ 0.58–0.84; length of ♀ proctiger, 0.68–0.92.

Larva unknown.

HOSTPLANTS. Adults collected from *Ficus natalensis* and *F. thonningi*; ((*Urostigma*) sect. *Galoglychia* subsect. *Chlamydodorae*).

Holotype ♂, **Tanzania**: Arusha NP, Ngurdoto crater rim, c. 5000′, 8.vi.1974, *Ficus natalensis* (*Hollis*) (BMNH); dry-mounted.

Paratypes. **Tanzania**: 3 ♂, 3 ♀, same data as holotype. **South Africa**: 2 ♂, 3 ♀, Pondoland, Port St John, ix–xii.1923 (*Turner*); 8♂, 12♀, Natal, Umtentweni, 14–17.x.1969, *Ficus petersii* (*Capener*). **Kenya**: 1 ♂, 1 ♀, Muguga, vii–viii.1954, trapped (*Eastop*); 1 ♂, 19.xi.1969 (*Brown*); 1 ♂, 3 ♀, Limuru, iv.1955 (*Thomas*); 1 ♂, Kakamega, 1500m, 4.ii.1977 (*Deharveng*). **Uganda**: 6 ♂, 2 ♀, Kampala, 17.iii.1923, on *Ficus* leaves (*Hargreaves*). **Angola**: 1 ♀, Chianga, 7.x.1971, *Ficus thonningii* (*van Harten*). **Burundi**: 2 ♂, 2 ♀, Gitega, 20.x.1980 (*Pointel*); 4 ♂, Kisozi, 6–20.iii.1981; 8 ♀, 5–17.iv.1981; 1 ♂, 1–15.v.1981; 2 ♂, 8–21.viii.1981; 10 ♂, 9 ♀, 22.iii.–4.ix.1981; 4 ♂, 3 ♀, 6–18.ix.1981; 4 ♂, 3♀, 10.ix.–2.x.1981; 10 ♂, 18 ♀, 3–16.x.1981; 4 ♂, 3 ♀, 17–30.x.1981 (*Aubrique*). **Cameroon**: 10 ♂, 12 ♀, Bamenda, 24.i.–6.ii.1957, yellow trays (*Eastop*). **Nigeria**: 1 ♂, K. State, 20 mls W. Lokoja, 21.iii.1970 (*Medler*). (BMNH; MNHN; NCI; MHN); dry- and slide-mounted, stored in 90% ethanol.

COMMENTS. *H. chlamydodora* may be recognised by the venation and pattern of the forewing and the single apical spur on the hind basitarsus. Probably it is most closely related to *H. bamendae* but has a more derived condition of the cubital vein of the forewing and the antennae have primitive, uncompressed flagellomeres.

Homotoma eastopi sp. n.

(Figs 40, 70, 102)

DESCRIPTION. (Only slide-mounted material available for study.) Antennal flagellum 2.67 times longer than head width, flagellomeres flat and strongly expanded (Fig. 40), 1st flagellomere not more than twice as long as wide, 8th flagellomere with one long pointed seta and one very short truncate seta apically; vertex deeply divided by median suture; genae with very small, conical swellings ventrally; ultimate rostral segment short, 2.0 times longer than wide.

Thorax weakly arched, pronotum broadly visible from above and without anterior projections. Forewing narrow-elongate, with acute apex, 3.1–3.7 times longer than wide, membrane hyaline with pattern as in Fig. 70; veins bearing long straight setae, *M* stem and branches entirely separate from *R* stem and branches, m_1 cell value 0.9, *Cu* stem about as long as *M*+*Cu* stem but 3–4 times longer than Cu_{1b}, cu_1 cell very elongate with a value of about 15.0, apex of claval suture close but not immediately adjacent to apex of Cu_{1b}, radular areas narrow-elongate and poorly defined; hindwing 0.75 times as long as forewing, *M* unbranched, *Cu* branching distally; basal spine of hind tibiia absent, apical spurs arranged 0 + 6; hind basitarsus with 2 apical spurs.

♂ proctiger (Fig. 102) with lobes developed laterodorsally, anal tube long; aedeagus as in Fig. 102; paramere of similar profile to that of *H. angolensis* [inner surface not visible in holotype].

♀ terminalia conical, proctiger 1.27 times longer than head width.

Measurements (1 ♂, 1 ♀). Maximum width of head, ♂ 0.64, ♀ 0.66; length of antennal flagellum, ♂ 1.76; length of ultimate rostral segment, ♂ 0.09, ♀ 0.10; length of forewing, ♂ 3.1, ♀ 3.72; length of hind tibia, ♂ and ♀, 0.74; length of ♀ proctiger, 0.84.

Larva and hostplant unknown.

Holotype ♂, **Cameroon**: Bamenda, 5000′, 25–31.i.1957, yellow pan trap (*Eastop*) (BMNH); slide-mounted.

Paratype. 1 ♀, same locality as holotype, 20–24.i.1957 (BMNH); slide-mounted.

COMMENTS. This species is differentiated from others in the genus by the shape, pattern and venation of the forewing, and the structure of the antenna and the male proctiger. It is probably the sister-species of *H. chlamydodora*.

Oriental Region

Homotoma altissimae (Yang & Li)

Caenohomotoma altissimae Yang & Li, 1984*a*: 206, 217. Holotype ♂, CHINA: on *Ficus altissima* (BAUIC) [not examined].

Homotoma altissimae (Yang & Li) Hodkinson, 1986: 312.

HOSTPLANT. *Ficus altissima*; ((*Urostigma*) sect. *Conosycea*).

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma annesleae (Yang & Li)

Caenohomotoma annesleae Yang & Li, 1984*a*: 205, 217. Holotype ♂, CHINA: on *Anneslea fragrans* (BAUIC) [not examined].
Homotoma annesleae (Yang & Li) Hodkinson, 1986: 313.

HOSTPLANT. Two adults recorded from *Anneslea fragrans* (Theaceae). These specimens were probably vagrants.

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma bambusae (Yang & Li)

Caenohomotoma (*Heterhomotoma*) *bambusae* Yang & Li, 1981: 82, 85, 86; 1984*a*: 210. Holotype ♂, CHINA: on *Bambusa* sp. (BAUIC) [not examined].
Caenohomotoma bambusae Yang & Li, 1984*a*: 216, 218.
Homotoma bambusae (Yang & Li) Hodkinson, 1986: 313.

HOSTPLANT. Two adults collected from *Bambusa* sp. (Graminae). These specimens were probably vagrants.

RECORDED DISTRIBUTION. China (Hainan).
No material examined.

Homotoma benjaminae (Yang & Li)

Caenohomotoma benjaminae Yang & Li, 1984*a*: 211, 217. Holotype ♂, CHINA: on *Ficus benjamina* (BAUIC) [not examined].
Homotoma benjaminae (Yang & Li) Hodkinson, 1986: 313.

HOSTPLANT. Three adults collected from *Ficus benjamina*; ((*Urostigma*) sect. *Conosycea*).

RECORDED DISTRIBUTION. China (Lincang Prov.).
No material examined.

Homotoma boheae Yu

(Fig. 71)

Homotoma boheae Yu, 1957: 45; Miyatake, 1975: 20; Hodkinson, 1986: 313. Holotype ♂, CHINA (?BPBM) [not examined].
Caenohomotoma (*Caenohomotoma*) *boheae* (Yu) Yang & Li, 1981: 78, 85; 1984*a*: 218.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. China (Fukien).

MATERIAL EXAMINED
Malaya, 1 ♂, 1 ♀ (BMNH).

Homotoma chuanana (Yang & Li)

Caenohomotoma (*Psausia*) *chuanana* Yang & Li, 1981: 81, 86. Holotype ♀, CHINA (BAUIC) [not examined].
Caenohomotoma chuanana Yang & Li; Yang & Li, 1984*a*: 216, 218.
Homotoma chuanana (Yang & Li) Hodkinson, 1986: 313.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. China (Sichuan). No material examined.

Homotoma distincta Crawford

Homotoma distincta Crawford, 1912: 433; 1919: 162; Ramakrishna Ayyar, 1924: 622; Boselli, 1929: 219; Miyatake, 1975: 21; Hodkinson, 1986: 313. Holotype ♀, INDIA (BMNH) [examined].
Psausia distincta (Crawford) Enderlein, 1921: 120; Heslop-Harrison, 1949: 379; Mathur, 1975: 156; Loginova, 1982: 39; Yang & Li, 1984*a*: 202, 217.
Caenohomotoma (*Harrisonella*) *distincta* (Crawford) Yang & Li, 1981: 78, 85.

HOSTPLANT. *Ficus religiosa* (Heslop-Harrison, 1949); ((*Urostigma*) sect. *Urostigma*).

RECORDED DISTRIBUTION. India (Bihar, U. P.).

MATERIAL EXAMINED
India (Bihar, U. P.): holotype ♀, 1 ♂ (BMNH).

Homotoma galbvittata (Yang & Li)

Caenohomotoma galbvittata Yang & Li, 1984*a*: 203, 217. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].
Homotoma galbvittata (Yang & Li) Hodkinson, 1986: 313.

HOSTPLANT. *Ficus* sp..

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma indica (Mathur)

Psausia indica Mathur, 1975: 158. Holotype ♂, INDIA: on '*Ficus infectoria*' (FRI) [not examined].

Caenohomotoma indica (Mathur) Yang & Li, 1984*a*: 218.
Homotoma indica (Mathur) Hodkinson, 1986: 313.

HOSTPLANTS. There is some confusion in the original description concerning the identity of the host. Under hostplant data Mathur states '*Ficus macrocarpa* (=*F. retusa*) and *F. lucescens* (=*F. infectoria*)'. Under type data only *Ficus infectoria* is given, and under biological notes Mathur states 'Both adults and nymphs are commonly found on young shoots of *F. macrocarpa* at . . . Dehra Dun'. *Ficus macrocarpa* (=*F. retusa*) is probably a misspelling of *F. micocarpa* (see Corner, 1965: 22), although it may refer to *F. laevis* var. *macrocarpa* (Corner, 1965: 53). *F. infectoria* may refer to either *F. tsjahela* or *F. virens* (Corner, 1965: 7 and 9 respectively).

RECORDED DISTRIBUTION. India (UP).
No material examined.

Homotoma lahui (Yang & Li)

Caenohomotoma lahui Yang & Li, 1984*a*: 212, 217. Holotype ♀, CHINA (BAUIC) [not examined].
Homotoma lahui (Yang & Li) Hodkinson, 1986: 313.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma maculata Yang

Psausia maculata Yang, 1984: 173. Holotype ♂, TAIWAN: on *Ficus beechyana* (NCHU) [not examined].
Homotoma maculata (Yang) Hodkinson, 1986: 313.

HOSTPLANT. *Ficus erecta* var. *beechyana*; ((*Ficus*) sect. *Ficus*).

RECORDED DISTRIBUTION. Taiwan.
No material examined.

Homotoma mangiferae (Yang & Li)

Caenohomotoma mangiferae Yang & Li, 1984*a*: 209, 217. Holotype ♂, CHINA: on *Mangifera indica* (BAUIC) [not examined].
Homotoma mangiferae (Yang & Li) Hodkinson, 1986: 314.

HOSTPLANT. The single known adult, recorded from *Mangifera indica*, was probably a vagrant.

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma pyriformiscola (Yang & Li)

Caenohomotoma pyriformiscola Yang & Li, 1984*a*: 207, 217. Holotype ♂, CHINA: on *Ficus pyriformis* (BAUIC) [not examined].
Homotoma pyriformiscola (Yang & Li) Hodkinson, 1986: 314.

HOSTPLANT. *Ficus pyriformis*; ((*Ficus*) sect. *Ficus*).

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma radiata Kuwayama

(Fig. 72)

Homotoma radiatum Kuwayama, 1908: 181; Crawford, 1911: 491; 1912: 433; 1915: 262; 1919: 162; Aulmann, 1913: 36; Kuwayama, 1931: 124; Sasaki, 1954: 31; Klimaszewski, 1973: 231; Hill et al., 1982: 174. Syntypes, ♂ and ♀, TAIWAN (EIHU) [not examined].
Psausia radiata (Kuwayama) Enderlein, 1914: 232; Heslop-Harrison, 1949: 375; Yang, 1984: 169; Fang & Yang, 1987: 147.
Psausia (*Homotoma*) *radiata* (Kuwayama) Kuwayama, 1922: 368.
Homotoma radiata Kuwayama; Boselli, 1929: 219; Miyatake, 1965*a*: 173; 1975: 20; 1981: 56; Yu, 1957: 44; Hodkinson, 1983: 349; 1986: 313.
Caenohomotoma radiata (Kuwayama) Yang & Li, 1981: 79; 1984*a*: 216, 218.

HOSTPLANTS. Recorded from *Ficus erecta*, *F. caulocarpa*, *F. superba* var. *japonica* and *Ficus* sp.

RECORDED DISTRIBUTION. Nepal, Taiwan, Japan and Hong Kong.

MATERIAL EXAMINED.
Hong Kong: adults on *Ficus superba* var. *japonica* (BMNH).

Homotoma ruiliana (Yang & Li)

Caenohomotoma ruiliana Yang & Li, 1984*a*: 214, 217. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].
Homotoma ruiliana (Yang & Li) Hodkinson, 1986: 314.

HOSTPLANT. A single male collected from *Ficus* sp.

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma shuana (Yang & Li)

Caenohomotoma (*Heterohomotoma*) *shuana* Yang & Li, 1981: 79, 85, 86; 1984*a*: 210. Holotype ♂, CHINA (BAUIC) [not examined].
Caenohomotoma shuana Yang & Li; Yang & Li, 1984*a*: 216, 218.
Homotoma shuana (Yang & Li) Hodkinson, 1986: 314.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. China (Sichuan).
No material examined.

Homotoma spiraea (Yang & Li)

Caenohomotoma (*Caenohomotoma*) *spiraea* Yang & Li, 1981: 79, 85, 86; 1984*a*: 216, 218. Holotype ♂, CHINA: on '*Spirae*' sp. (BAUIC) [not examined].
Homotoma spiraca (Yang & Li) Hodkinson, 1986: 314. [Misspelling.]

HOSTPLANT. Described from 12 adults collected on '*Spirae*' sp. [? *Spiraea* sp.].

RECORDED DISTRIBUTION. China (Zhejiang).
No material examined.

Homotoma unifasciata Yu

Homotoma unifasciata Yu, 1957: 45; Miyatake, 1975: 21; Hodkinson, 1986: 314. Holotype ♂, CHINA (? BPBM) [not examined].
Caenohomotoma (*Caenohomotoma*) *unifasciata* (Yu) Yang & Li, 1981: 78, 85.
Caenohomotoma unifasciata (Yu); Yang & Li, 1984*a*: 216, 218.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. China (Fukien); Japan.
No material examined.

Homotoma wulinensis (Yang)

Psausia wulinensis Yang, 1984: 170. Holotype ♂, TAIWAN: on *Ficus sarmentosa* (NCHU) [not examined].
Homotoma wulinensis (Yang) Hodkinson, 1986: 314.

HOSTPLANT. *Ficus sarmentosa*; ((*Ficus*) sect. *Rhizocladus*).

RECORDED DISTRIBUTION. Taiwan.
No material examined.

Homotoma xishuangana (Yang & Li)

Caenohomotoma xishuangana Yang & Li, 1984*a*: 213, 217. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].
Homotoma xishuangana (Yang & Li) Hodkinson, 1986: 314.

HOSTPLANT. Described from four adults collected on *Ficus* sp.

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Homotoma yunnanica (Yang & Li)

Caenohomotoma yunnanica Yang & Li, 1984*a*: 210, 217. Holotype ♂, CHINA: on *Ficus* sp. (BAUIC) [not examined].
Homotoma yunnanica (Yang & Li) Hodkinson, 1986: 314.

HOSTPLANT. Described from nine adults collected on *Ficus* sp.

RECORDED DISTRIBUTION. China (Yunnan).
No material examined.

Australo-oriental Region

Homotoma bakeri Crawford

Fig. 73)

Homotoma bakeri Crawford, 1915: 263; 1919: 162; Boselli, 1929: 219; Heslop-Harrison, 1949: 376; Miyatake, 1975: 20; Braza & Calilung, 1981: 353; Hodkinson, 1983: 349. Holotype ♀, PHILIPPINES (USNM) [examined].
Metapsausia bakeri (Crawford) Enderlein, 1921: 120.
Caenohomotoma (*Metapsausia*) *bakeri* (Crawford) Yang & Li, 1981: 78, 85.
Caenohomotoma bakeri (Crawford) Yang & Li, 1984*a*: 218.

HOSTPLANT. *Ficus benjamina* var. *nuda* (=*F. comosa*; recorded as *F. carnosa* by Braza & Calilung); ((*Urostigma*) sect. *Conosycea*).

RECORDED DISTRIBUTION. Philippines (Luzon and Mindanao); West Malaysia (Penang).

MATERIAL EXAMINED
Philippines: ♂, ♀ and larvae, Mt Makiling. **West Malaysia**: 1 ♀, Pahang (BMNH).

Homotoma bilineata Crawford

Homotoma bilineata Crawford, 1917: 164; 1919: 162; Boselli, 1929: 219; Miyatake, 1975: 20.

Holotype ♂, PHILIPPINES (USNM) [examined].

Metapsausia bilineata (Crawford) Enderlein, 1921: 120.

Homotoma biliniata Crawford; Heslop-Harrison, 1949: 376. [Misspelling.]

Caenohomotoma (*Metapsausia*) *bilineata* (Crawford) Yang & Li, 1981: 78, 85.

Caenohomotoma bilineata (Crawford) Yang & Li, 1984a: 218.

HOSTPLANT. *Ficus* sp. (1 ♀, BMNH).

RECORDED DISTRIBUTION. Philippines (Luzon); Thailand.

MATERIAL EXAMINED

Philippines: 1 ♂ (holotype), Luzon (USNM); 1 ♀, Palawan (BMNH).

COMMENTS. Hodkinson's (1983, 1986) records of *H. bilineata* from Sarawak refer to a closely related species, of which there are further specimens in BMNH from Sulawesi and Seram.

Homotoma gressitti Miyatake

Homotoma gressitti Miyatake, 1975: 17; Hodkinson, 1983: 349. Holotype ♀, PAPUA NEW GUINEA (BPBM) [not examined].

Caenohomotoma (*Austrohomotoma*) *gressitti* (Miyatake) Yang & Li, 1981: 78, 85.

Caenohomotoma gressitti (Miyatake) Yang & Li, 1984*a*: 218.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. Papua New Guinea.

MATERIAL EXAMINED

A series of adults from **Papua New Guinea** (Mondo), in BMNH, differ from the original description slightly in forewing venation and pattern.

Homotoma pacifica Crawford

(Fig. 64)

Homotoma pacifica Crawford, 1915: 262; 1919: 162; Boselli, 1929: 219; Heslop-Harrison, 1949: 378; Miyatake, 1975: 21; Yang & Li, 1981: 78, 85; Hodkinson, 1983: 349. Holotype ♂, PHILIPPINES (USNM) [examined].

Labobrachia pacifica (Crawford) Enderlein, 1921: 19; Heslop-Harrison, 1949: 376; Yang & Li, 1984*a*: 201, 217.

HOSTPLANT. Unknown.

RECORDED DISTRIBUTION. Philippines (Luzon).

MATERIAL EXAMINED

Philippines: 1 ♂ (holotype) (USNM). **Indonesia**: 1 ♀, Sulawesi Utara (BMNH).

COMMENTS. A single ♀ of a closely related but undescribed species (Fig. 65) is in BMNH, also from Sulawesi Utara.

SYNOZINI Bekker-Migdisova

Synozini Bekker-Migdisova, 1973: 102. Type genus: *Synoza* Enderlein.

Synoziini White & Hodkinson, 1985: 162. [Misspelling.]

DIAGNOSIS. In forewing *M+Cu* stem absent, *M* stem completely fused along its basal two-thirds with *Rs*, radular area absent from cell m_2; hind tibia with an almost complete ring of apical spurs; ♂ proctiger unipartite; basal segment of aedeagus not expanded, apical segment with a pair of subapical spiniform processes ventrally.

A single, New World genus, *Synoza*, is included here. It comprises three species from Central and South America and recorded hostplants are *Ficus* spp.

SYNOZA Enderlein

Synoza Enderlein, 1918: 479; Laing, 1923: 697; Ferris, 1928: 109; Caldwell, 1941: 419; Tuthill, 1950: 58: Bekker-Migdisova, 1973: 102; Hodkinson & White, 1981: 509; White & Hodkinson, 1985: 272; Brown & Hodkinson, 1988: 179. Type species: *Synoza cornutiventris* Enderlein, by original designation and monotypy.

DESCRIPTION. Medium-sized psyllids, up to 5.0 mm. Integument of head and thorax sparsely covered with long setae. Head (Figs 25, 26), from above, about as wide as mesoscutum; vertex concave on either side of median suture, anterior and lateral margins rounded, occipital margin angular medially but rounded laterally, anterior margin deeply incised by median suture, lateral ocelli on raised tubercles, anterolateral tubercles absent; antennal bases enlarged, giving head a cleft appearance, flagellum about 4 times longer than head width, flagellomeres cylindrical, a single subapical rhinarium present on flagellomeres 2, 4, 6 and 7; genae not swollen ventrally; ultimate rostral segment short, less than 2.5 times longer than wide.

Thorax, in profile, strongly arched, pronotum very narrowly visible from above and descending

sharply behind occiput. Forewing (Fig. 74) obovate, with rounded apex, about 2.5 times longer than wide, veins bearing long setae, *C+Sc* not thickened, costal break indicated by weakening of chitin in break area, basal two-thirds of *M* stem completely fused with *Rs*, apex of M_{1+2} reaching wing margin anterior to wing apex, *M+Cu* absent, m_1 cell value about 1.0, cu_1 cell value about 1.0, radular areas sharply defined but absent from cell m_2, apex of claval suture distant from apex of Cu_{1b}; basal spine of hind tibia absent, apical spur ring almost complete; hind basitarsus with 2 apical spurs.

♂ proctiger unipartite, with well-developed lateral lobes that do not bear inner apical lobes; basal segment of aedeagus not expanded in apical half, apical lobes of aedeagus with a pair of spiniform lobes ventrally (Fig. 105).

♀ terminalia conical or elongate conical; circum-anal pore ring simple.

Larva. Body longer than wide; antenna long, filiform, not subdivided; wing pads small, humeral lobes not developed; body surface membraneous with thoracic sclerites not defined, setae mainly simple but abdominal segments bearing small groups of 1–3 pointed sectasetae submarginally on dorsal surface, dorsal caudal plate (Fig. 113) small, bearing groups of pointed sectasetae; anus ventral (Fig. 113), with a large, medially constricted circum-anal pore ring; tarsal arolium triangular, not petiolate.

Comments. Laing (1923) and Ferris (1928) placed *Synoza* in the Carsidaridae sensu Crawford (1919); Bekker-Migdisova (1973: fig. 2) considered the genus to be the sister-group of the rest of the homotomids, and White & Hodkinson (1985) regarded it as the sister-group of *Homotoma*.

The three included species are discussed and differentiated by Brown & Hodkinson (1988).

Synoza cornutiventris Enderlein

(Figs 25, 26, 74, 105)

Synoza cornutiventris Enderlein, 1918: 480; Laing, 1923: 697; Crawford, 1925*b*: 58; Ferris, 1928: 109; Costa Lima, 1942: 105; Hodkinson & White, 1981: 509; Brown & Hodkinson, 1988: 180. Holotype ♀, PERU (not traced).

Hostplant. *Ficus* sp. (Brown & Hodkinson, 1988).

Recorded distribution. Colombia, Panama and Peru.

Material examined
Colombia: 1 ♂, 1 ♀, on *Ficus* sp.; **Panama**: 3 ♀ (BMNH).

Synoza floccosa Ferris

(Fig. 113)

Synoza floccosa Ferris, 1928: 109; Klyver, 1930: 175 (as a synonym of *S. pulchra* Laing); Tuthill, 1950: 59; Hodkinson & White, 1981: 509; Brown & Hodkinson, 1988: 180. Syntypes ♂, ♀, larvae, MEXICO: on *Ficus* sp. (SUNHM) [examined].
Synoza pulchra Laing; Caldwell, 1941: 421, in part.

Hostplant. *Ficus* sp.

Recorded distribution. Mexico.

Material examined
Mexico: adults and larvae on *Ficus* sp. (syntype series, SUNHM).

Synoza pulchra Laing

Synoza pulchra Laing, 1923: 696; Caldwell, 1941: 421; Tuthill, 1950: 58; Hodkinson & White, 1981: 509; Brown & Hodkinson, 1988: 182. Holotype ♂, MEXICO (BMNH) [examined].
Synoza pulchar Laing; Klyver, 1930: 175. [Misspelling.]

Hostplant. Unknown.

Recorded distribution. Mexico, Panama.

Material examined
Mexico: 1 ♂ (holotype); **Panama**: 1 ♂ (BMNH)

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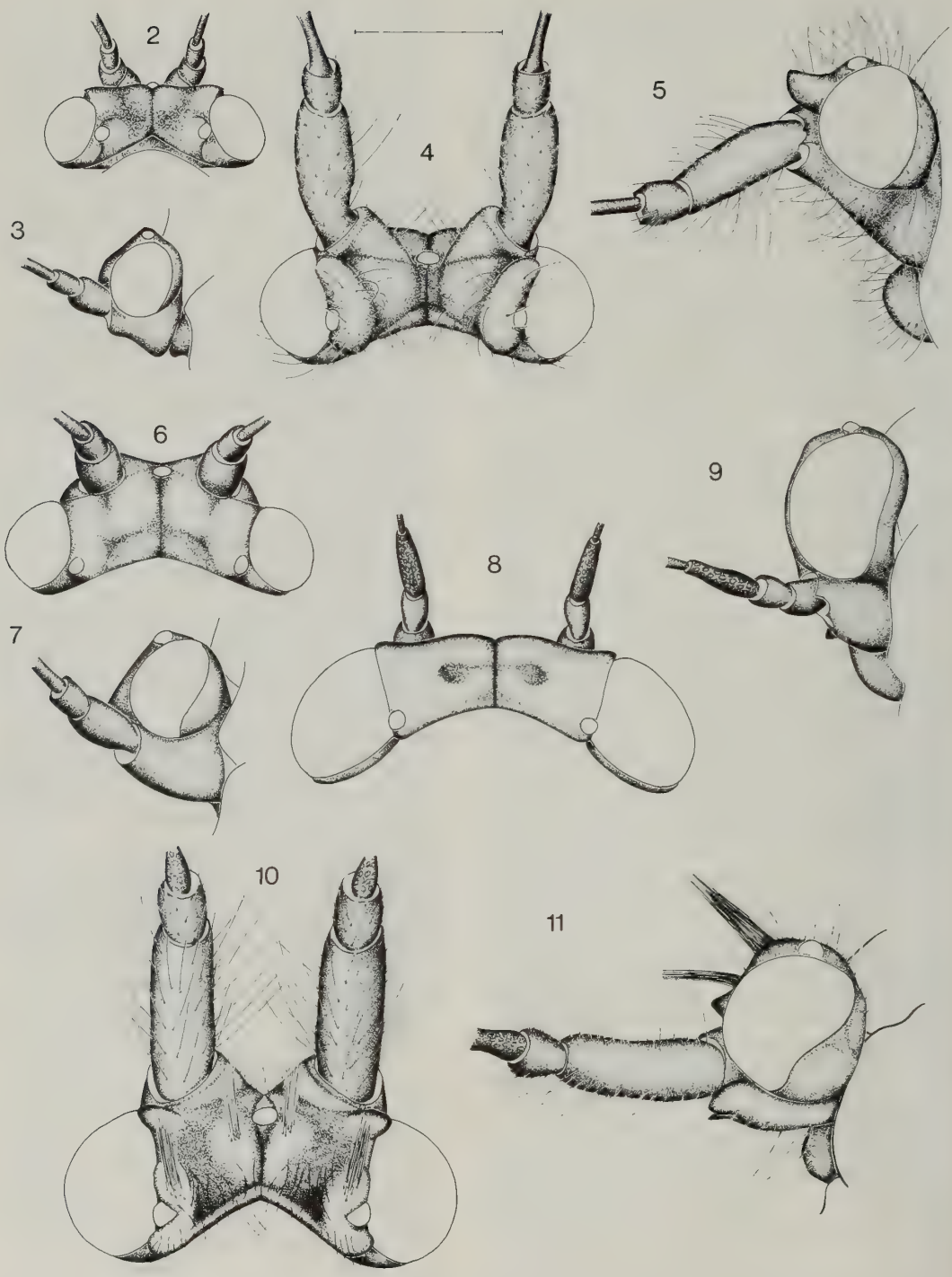

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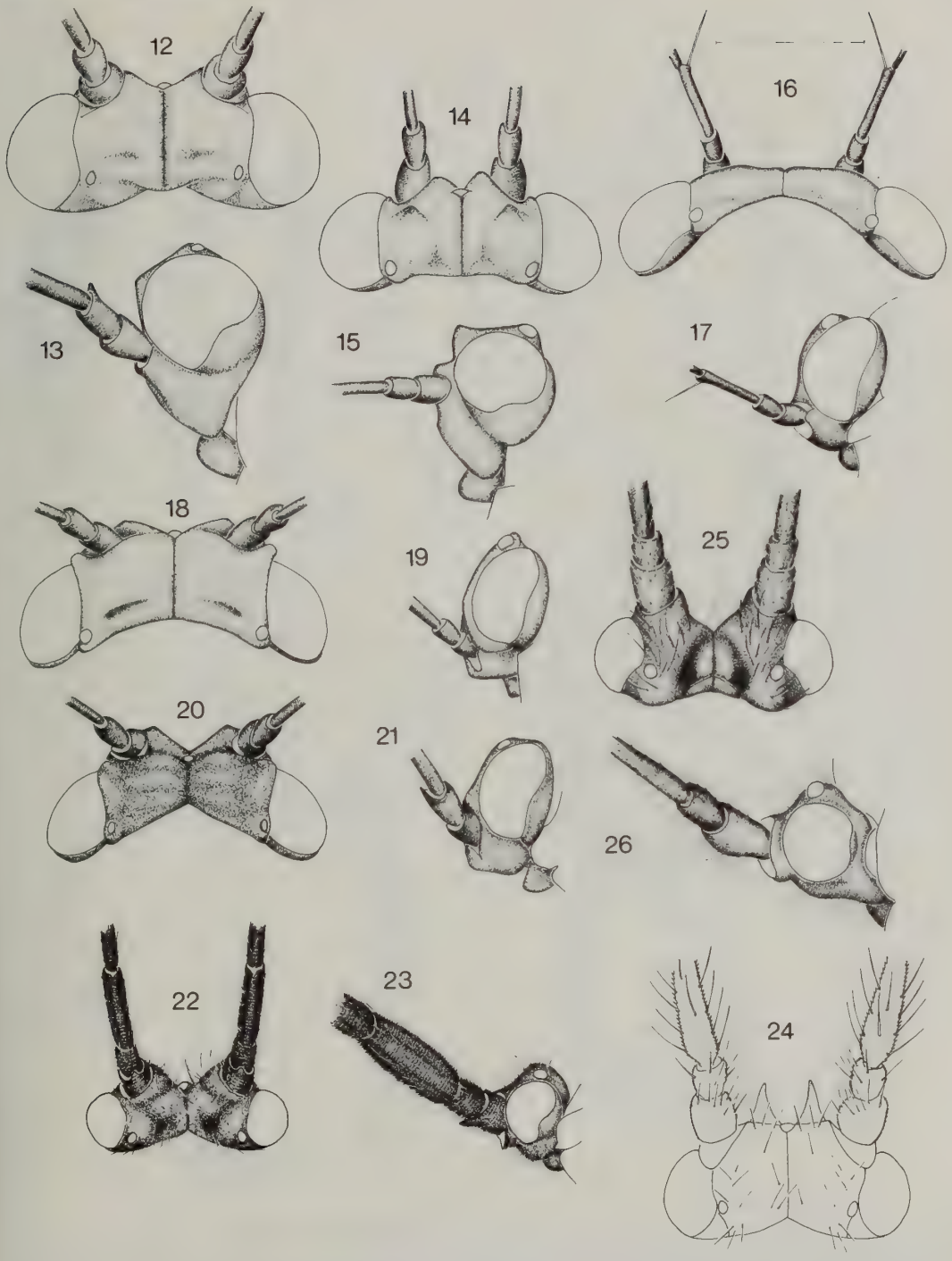

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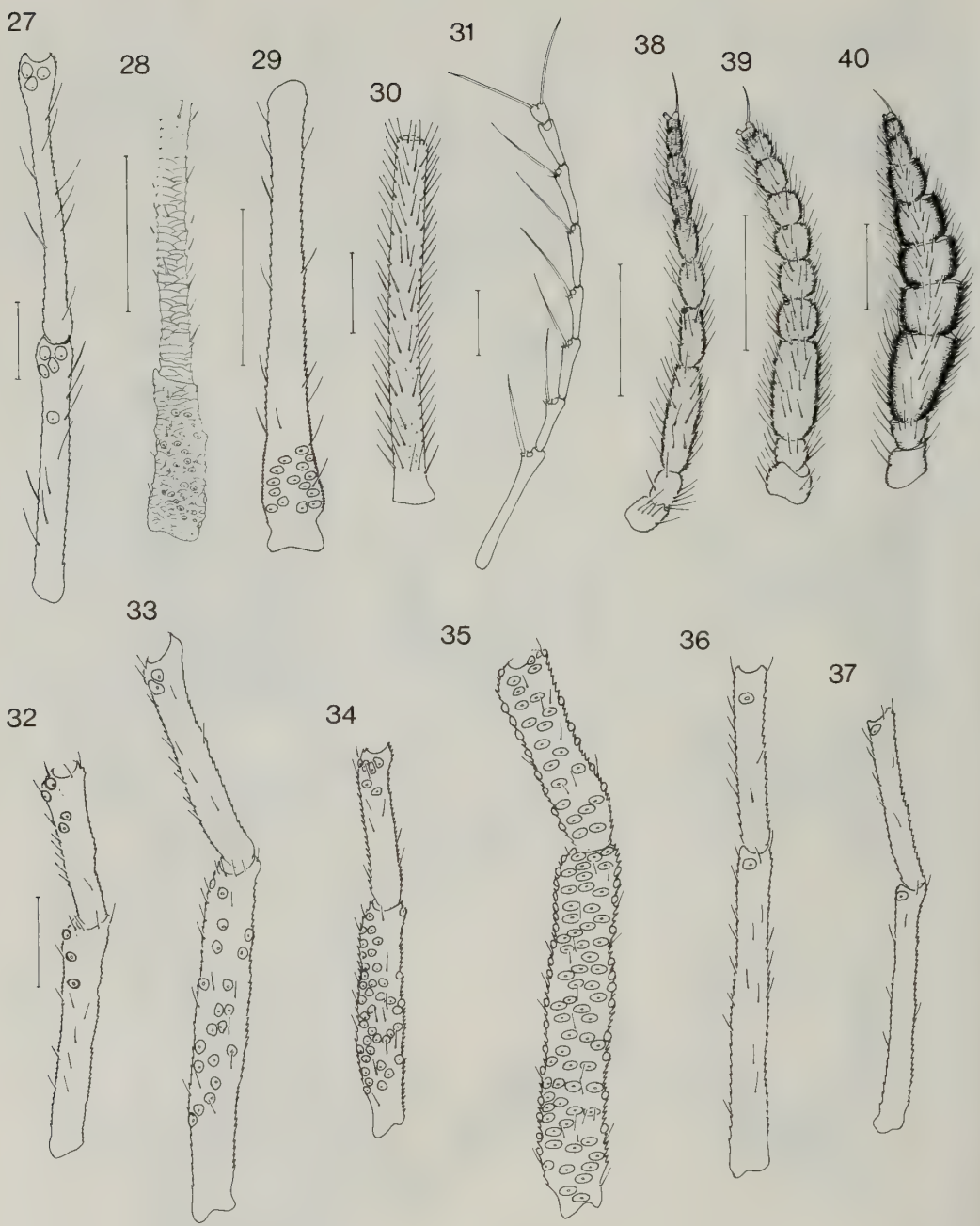

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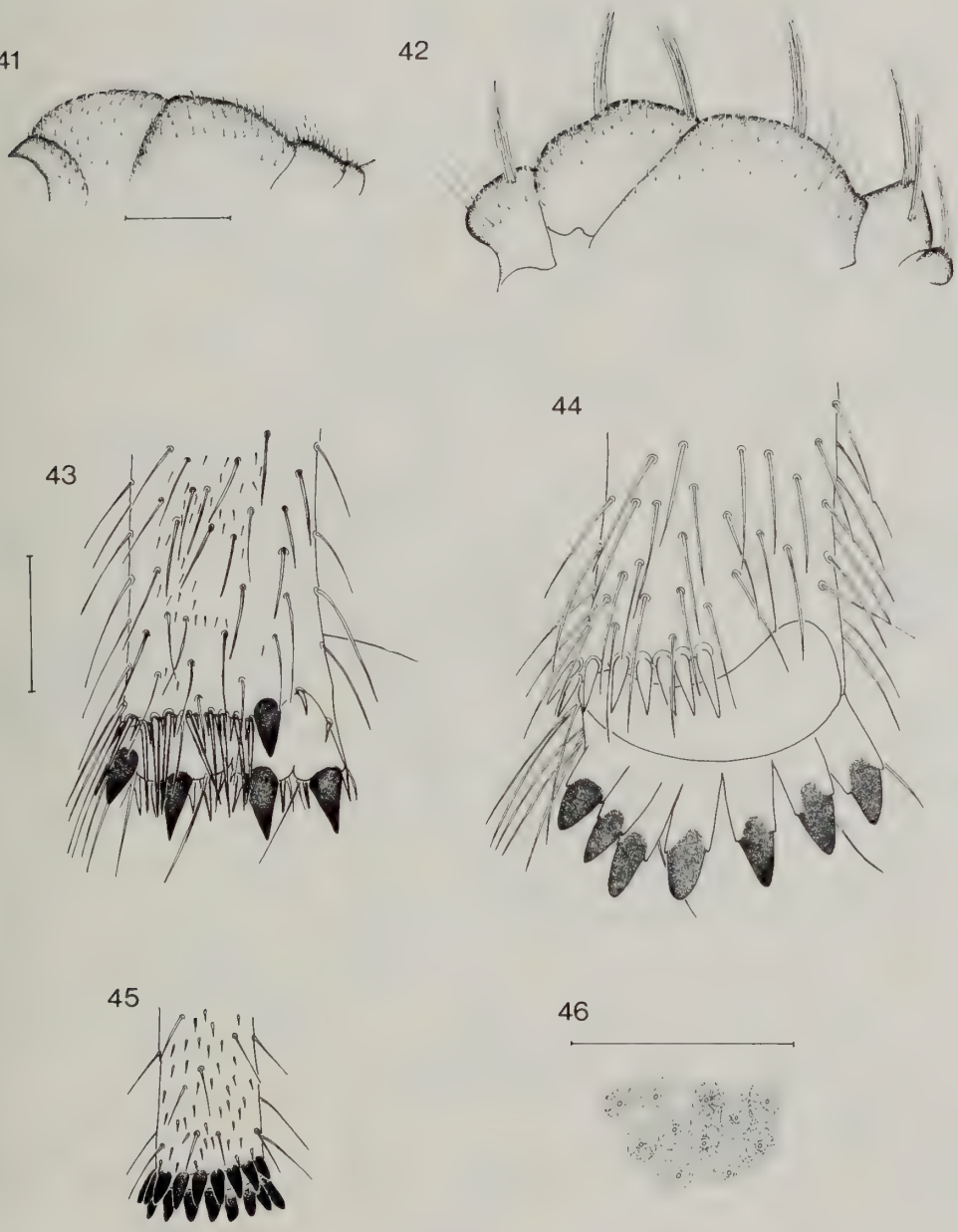

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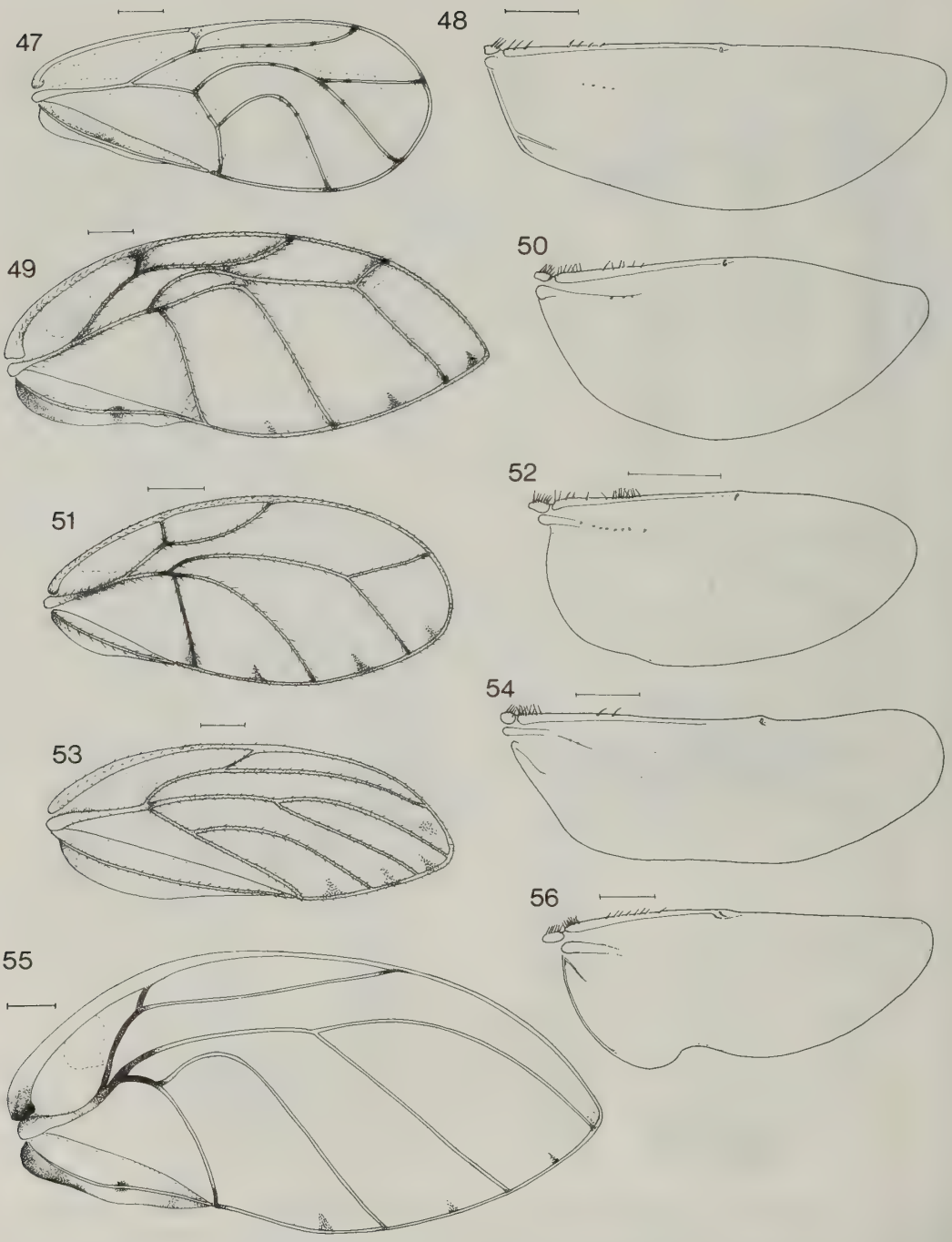

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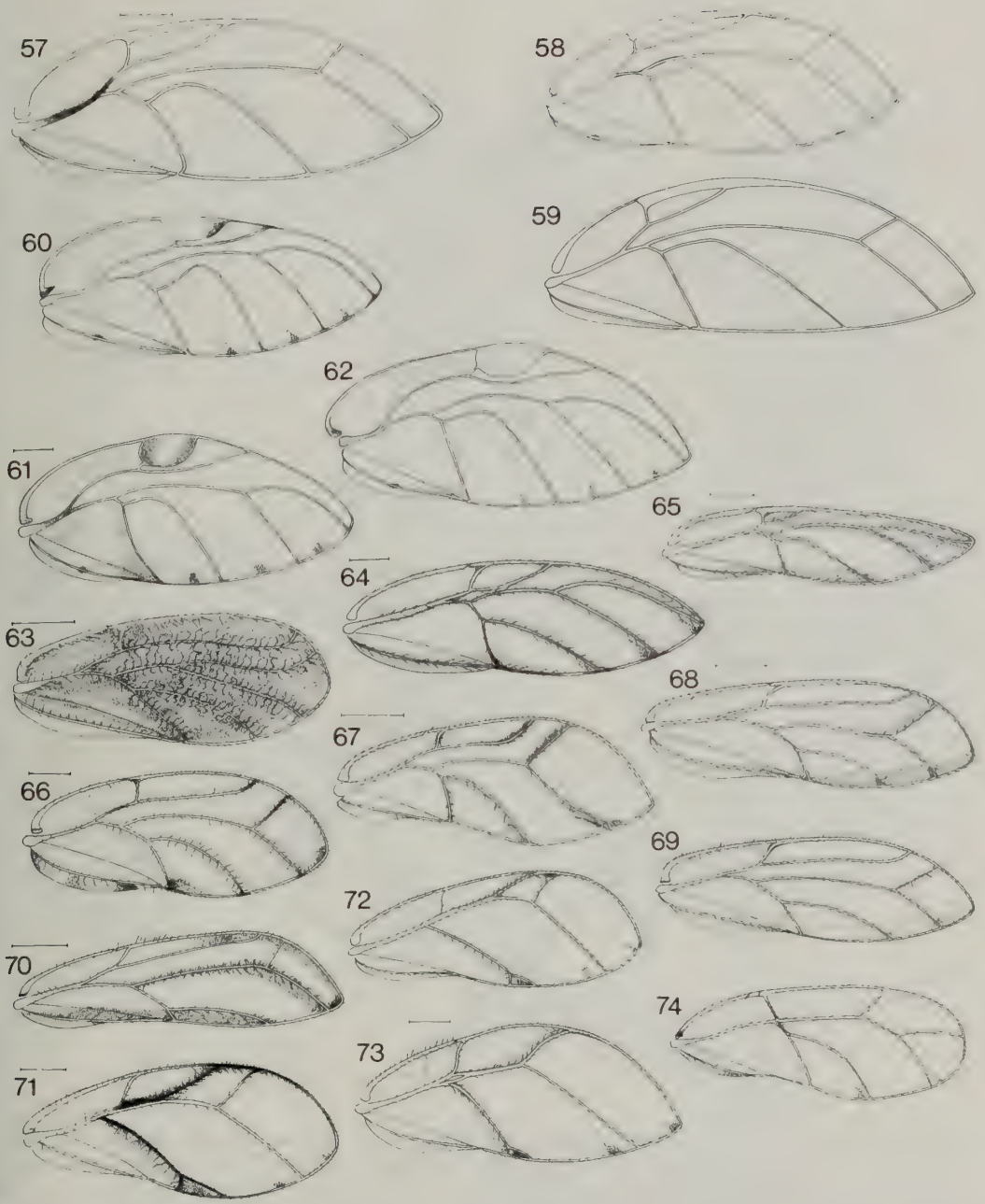

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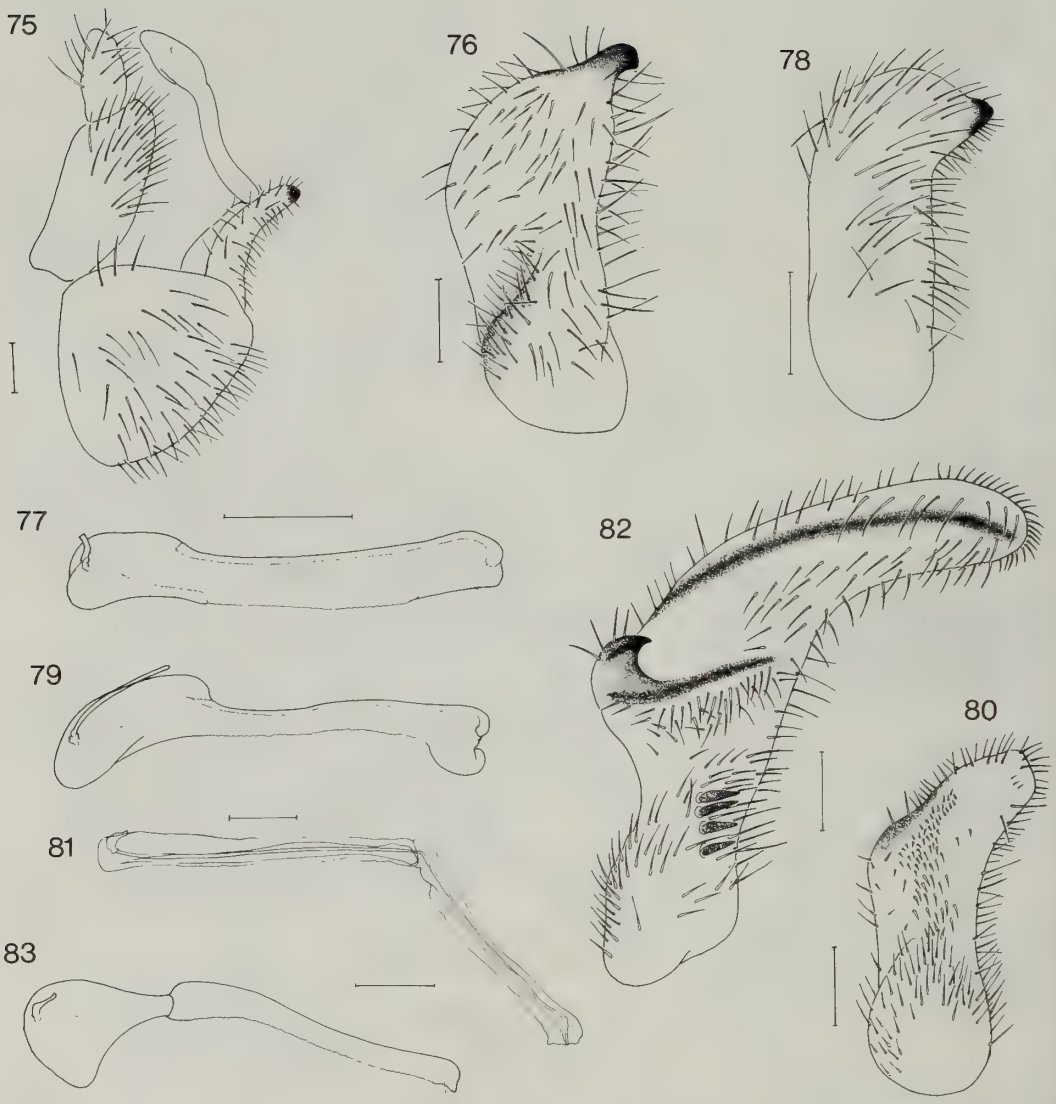

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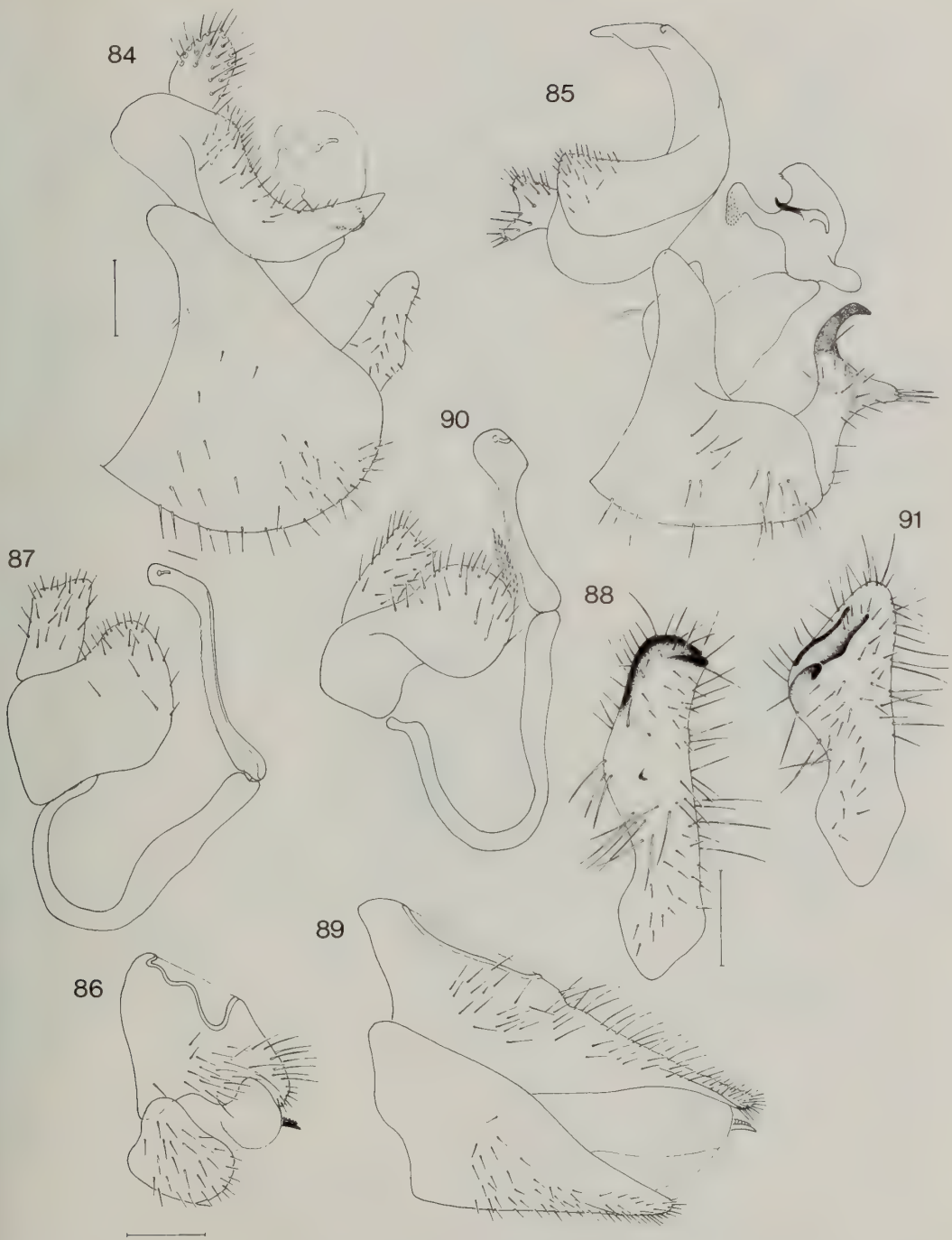

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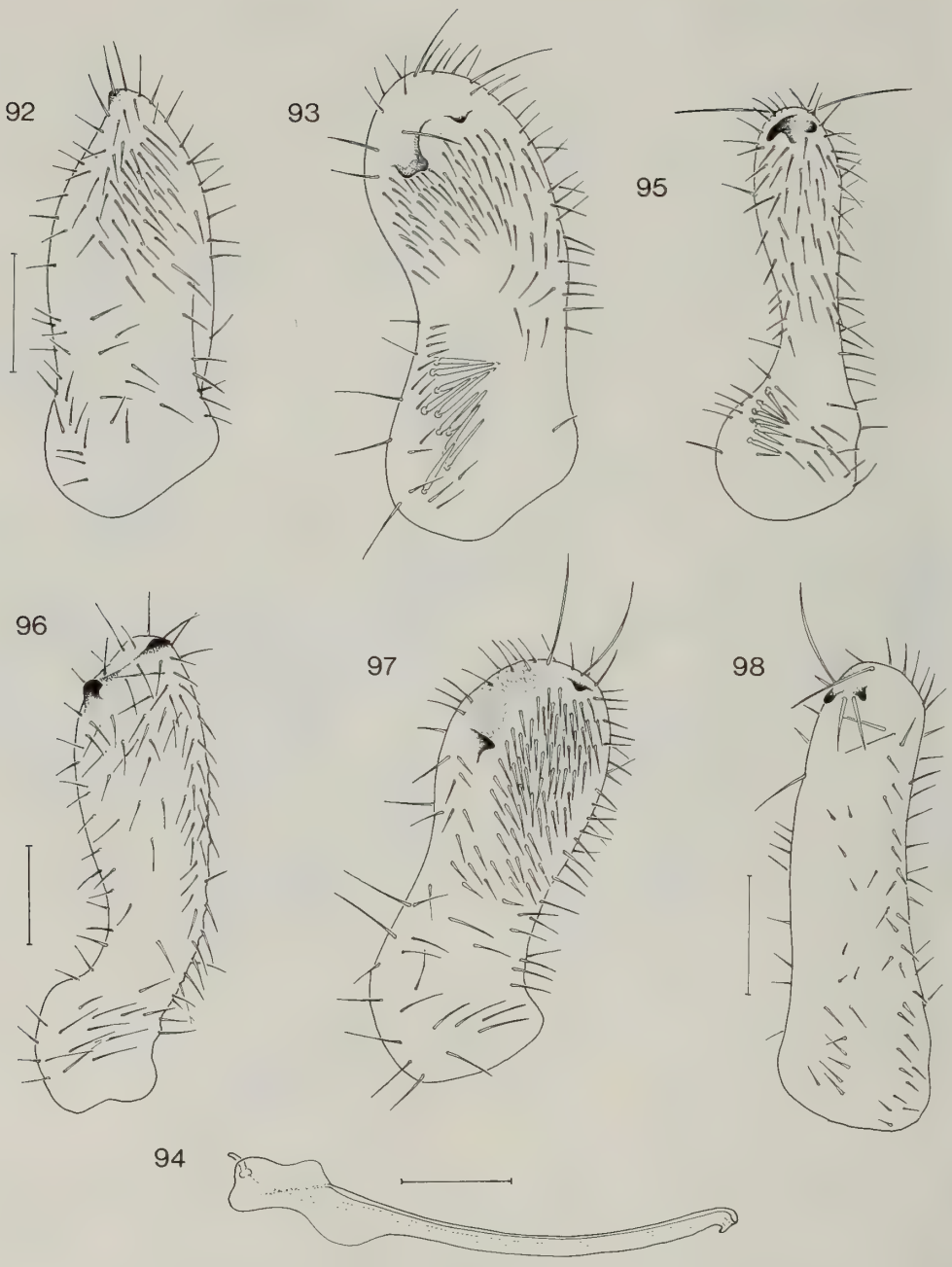

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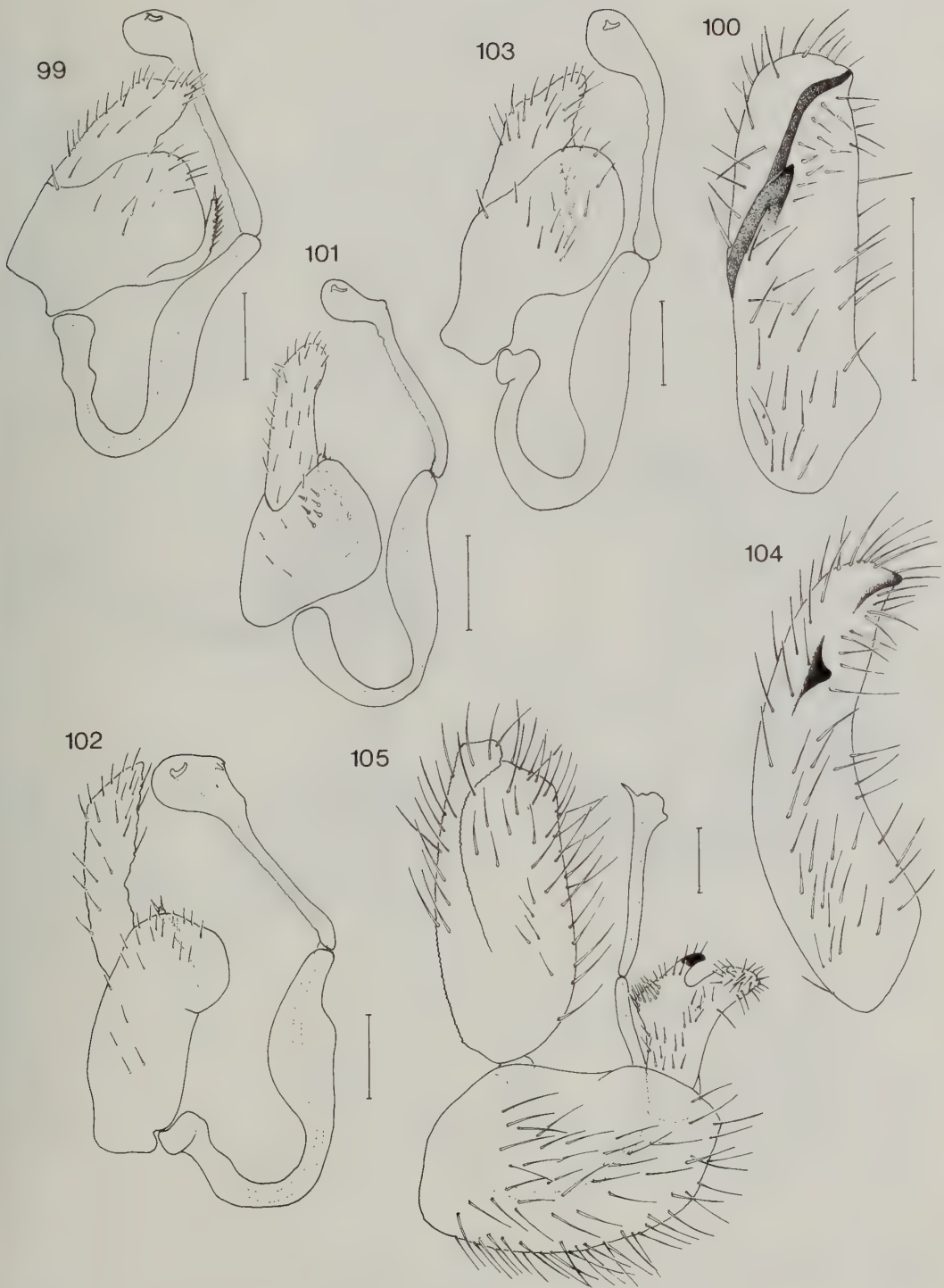

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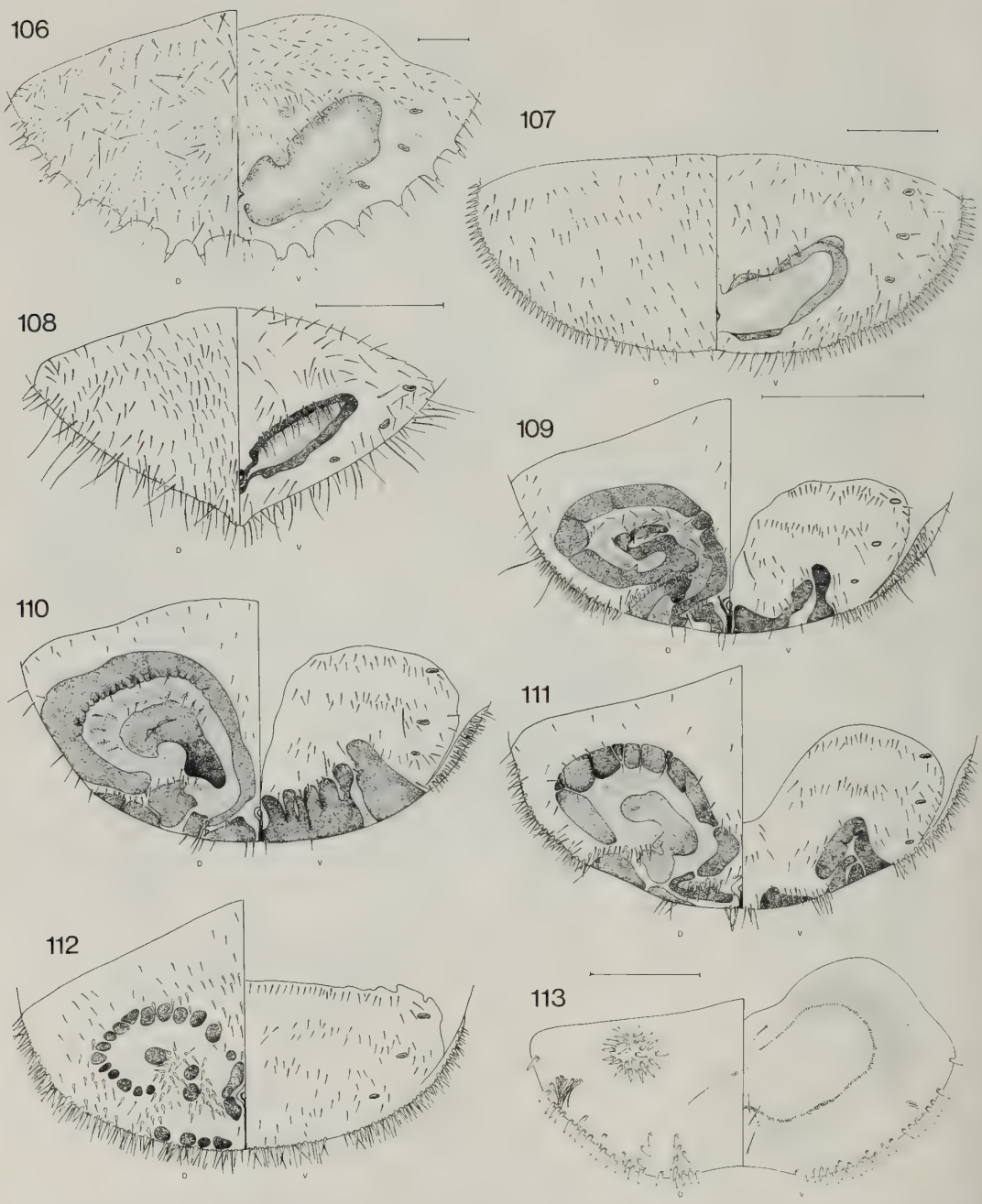

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The species of *Poecilominettia*, *Homoeominettia* and *Floriminettia* (Diptera: Lauxaniidae) in Panama

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Synopsis. Fifty-four species and 2 genera obtained by light-trapping and by fogging the high canopy in forests of the Panama region are newly described. Fifty-one of these species belong to the genus *Poecilominettia*. The character of the labellum is used for the first time in taxonomic study and has proved useful in generic delineation. Species of *Floriminettia* are not fungal grazers, but those of *Poecilominettia* and *Homoeominettia* are. Analysis of the gut content indicates that 43 species living on the island of Barro Colorado form a large guild feeding upon phylloplane fungi. Of these a group of 29 very closely related and hitherto undescribed species are separated by examination of the male genitalia. It is suggested that there may be a mutualistic association of lauxaniid flies with the trees. Keys to the genera and species of *Poecilominettia*, *Homoeominettia* and *Floriminettia* are provided.

INTRODUCTION

In Panama, flies of the family Lauxaniidae are found, often in large numbers, in forest areas where they have a close relationship with the trees. Adults of a great many species in various genera have a much modified labellum, enabling them to feed upon phylloplane fungi (Broadhead, 1984), while their larvae live mainly as miners of fallen leaves. Of these genera, *Pseudogriphoneura*, *Sapromyza*, *Xenochaetina*, and *Poecilominettia* in particular were found to be represented by many undescribed and very closely related species. This study is, however, limited mainly to those of the last-named genus. An interesting taxonomic problem was presented on the island of Barro Colorado where a swarm of very closely related species, hitherto undescribed, belonging to the genus *Poecilominettia* was discovered. An investigation of this prompted a study of other material available to me from various Panamanian sites. This paper comprises descriptions of all the new species together with a key to three genera encountered in the Panama region, as well as keys to the species.

The family Lauxaniidae at present consists of 126 genera, few of which are worldwide in their distribution. Major contributions to the taxonomic background of this family were made by

Malloch and Hendel working independently in the 1920s and 30s, by Curran somewhat later on Central American species, by Shewell on North American species, and more recently by Stuckenberg in his valuable monograph of the Old World genera.

Stuckenberg (1971) pointed out that useful characters for defining genera had not been forthcoming and recommended that further studies should be done on the post-abdomen. This applies especially to *Minettia*, a genus worldwide in its distribution, which Stuckenberg regarded as probably not a monophyletic group but rather an aggregation of species having in common an intra-alar bristle. The genus *Poecilominettia* was created by Hendel (1932) for certain Central American species which differed from those of *Minettia* in respect of the position of the anterior frontal and of the ocellar bristles, the type species being *picticornis*. His definition of the genus *Minettia* was later clarified by Collin (1948), who worked on the British Lauxaniidae, and by Stuckenberg (1971).

In the present paper a contribution towards further delineation of both *Poecilominettia* and *Minettia* is offered, and as a result of these evaluations certain species are removed and placed in a new genus, *Floriminettia*. A second new genus, *Homoeominettia*, is erected to accommodate three species, two of which were originally described by Malloch (1926) in *Minettia*. Subsequently (1928) he placed all three in *Deutominettia*, in spite of the fact that they did not possess the haired scutellar disc characteristic of that genus, but retained them in his key to the species of *Minettia* (1928). Flies of the genus *Minettia* s.str. were not represented in the collections studied here. In the key to genera, *Minettia* s.str. is therefore not included.

The taxonomic characters used in this study are based on the male genitalia and the labellum, along with the hairing of the arista and body marking. The large fleshy labellum of the Lauxaniidae has not hitherto been used for taxonomic differentiation. The evolution of the structures on the borders of the pseudo-tracheal canals, along with the increase in diameter of the canals resulting in a reduction of their numbers, has enabled the flies to crop and ingest solid food particles of fungal matter. Such feeding habits are quite unusual in adult Diptera.

The labellum of unique specimens was not removed but, since the flies were preserved in alcohol, this was gently opened out and the main outlines of its morphology readily observed (Fig. 13D). The gut content was not removed in these cases either, but the presence of fungal material was easily recognised by the very dark gut showing through the yellow integument.

BIONOMICS

Microscopic examination of the pseudo-tracheal canals and of the gut content of all the species described here, as well as *picticornis* and *zebroides*, but with the exception of those species represented by a single individual, revealed that the food consisted of short lengths of fungal hyphae and fungal spores and was virtually indistinguishable from one species to another.

On the island of Barro Colorado, with an area of 23 square kilometres, at least 43 species of the genus *Poecilominettia* co-exist, all of which are known to feed upon the same material, namely phylloplane fungi. Within that group there are 29 species particularly closely related, which are difficult to separate except by examination of the male genitalia, the structures of which are remarkably varied. Particles of food found in the pseudo-tracheal canals of the labellum and within the gut are virtually indistinguishable from species to species and consist of short lengths of fungal hyphae and fungal spores. Such species diversity cannot therefore be accounted for in terms of selective pressures operating on food requirements. Broadhead (1983) found a similar situation in Psocoptera collected in Panama. Curiously enough the diet of the psocids and that of the lauxaniid flies are almost identical. Mound (1977) also found species swarms in fungal-feeding thrips (Phlaeothripinae) in one site in southern Brazil. These insects were feeding upon fungal hyphae associated with leaf decay on the forest floor.

There is considerable interest among ecologists at the present time in guilds of species. Shorrocks & Rosewell (1986), working on *Drosophila*, have concluded that, in laboratory conditions, guild-size centres on an average of seven species, but in the wild, such a guild would be two or three times that size. The *Drosophila* species are of course utilising various ephemeral resources, in contrast to the lauxaniids which are feeding on self-regenerating food material that is uniformly dispersed in space and time. The many species of lauxaniid flies in the various genera present in the rain forest of Barro Colorado Island would form an enormous guild of size far greater than 21.

A large number of individuals of a hitherto undescribed species of *Drosophila* found in the light-trap samples from Barro Colorado Island appear to have joined the lauxaniid guild, for the

adults have a labellum modified for fungal grazing and indeed the gut, on microscopical examination, was found to be packed with short lengths of fungal hyphae of the type found in the gut of the lauxaniids.

Flies of the family Lauxaniidae are not regarded as being of any economic importance. In fact it would seem that they are behaving in a way beneficial to the trees, by removing fungal hyphae that reduce the amount of light penetrating the leaf tissue - hyphae that might also facilitate the introduction of plant diseases. There may well be here the development of a mutualistic situation. Although the larval habits of the species under consideration here are not known, it is generally accepted that the majority of larvae do develop within the tissues of fallen leaves. I have bred various species of British lauxaniids from leaf mould in my garden. Odum (1963) thought that several types of mutualism originate from neutralistic associations.

MATERIAL

Material for this study was obtained in Panama in several ways, namely, from pyrethrum fogging (July–August 1979) of the high canopy of forests in the Canal area, from light traps at Fortuna (mountain valley), Miramar (coastal valley), and Barro Colorado Island (1976–83), as well as from hand collecting.

In addition, a large collection of Lauxaniidae from Central America, many not determined, was made available for examination when the United States National Museum in Washington kindly sent me their specimens on a long term loan.

Type specimens and other material are deposited in the British Museum (Natural History), abbreviated to BMNH, or in the National Museum of Natural History, Washington, D.C. (USNM).

TAXONOMIC CHARACTERS

The taxonomic characters used in this study are based on the male genitalia, the nature of the labellum, and any markings, especially on the face, frons and scutellum. Occasionally the ring sclerite (7th abdominal segment) of the male proved useful. Features of the female postabdomen were examined, but since no pairs were captured in copula, it was not possible in most cases to assign the females to any particular species and so they were omitted from detailed study here. This is especially true of the group of 29 very closely related species of *Poecilominettia* found on the island of Barro Colorado. Steyskal (1971), in his study of species of the *Minettia obscura* group in North America, found that the only useful characters for separating five closely related species were those of the male genitalia.

Part of the male genitalia was readily examined without dissection, viz. the epandrium (dorsal part of the periandrium), and the pair of articulated lobes borne on the periandrium which function as claspers during copulation (variously termed gonopods, telemeres, basimeres or parameres). It was necessary to mount the aedeagus on a slide, however, in order to examine the internal structures. Usually the aedeagus is strengthened on the inner wall of its lobe-like structure by sclerotised spines and by long chitinised rods armed with posteriorly pointing spines. Occasionally the aedeagus is a delicate inflatable sac, similar to that observed in the family Celyphidae which, according to Griffiths (1972), is grouped with the Lauxaniidae into the superfamily Lauxanioidea.

The hypandrium can in some cases be seen without dissection, but usually its outline is best observed on a slide since its structure is delicate.

In some species the ring sclerite is distinctive, when its characteristic shape is a useful additional item in defining the species.

The labellum is best examined microscopically. This was done by dissecting off the ventral surface and mounting it on a slide. The two halves, when opened out and flattened, present a heart shape which varies slightly from species to species. The distal area bears upstanding structures in rows along the borders of the pseudotracheal canals (Figs 14, 15). These enable the flies to graze upon phylloplane fungi, proof of which is readily obtained by examination of the pseudo-tracheal canals and gut content. This modification of the feeding surface of the labellum has been described for many species in various genera of Lauxaniidae, both in Britain as well as Panama (Broadhead, 1984). Fungal-feeding species of lauxaniid flies have fewer and broader pseudo-tracheal canals than liquid-feeding species (Broadhead, 1984).

GENERIC EVALUATIONS

Since the establishment of *Minettia* Robineau-Desvoidy, 1830, with *nemorosa* (= *rivosa*) as type

species, the large number of species, whose only common feature is the presence of an intra-alar bristle, has been grouped into a number of genera. *Minettia* s.str. has been defined most clearly and most recently by Stuckenberg (1971) to include those species with the following characters: an intra-alar bristle, frons usually as wide as an eye, face dull, wings rarely patterned, arista only short-haired, ocelli in an equilateral triangle or nearly so and quite widely spaced, ocellar bristles as wide apart as the posterior ocelli and placed forwards so that they are in line or almost in line with the hind edges of the anterior ocellus. For the British species, Collin (1932) noted that the ocellar bristles are situated outside an imaginary line connecting the outer faces of the anterior and posterior ocelli.

I propose to add two further characters, viz. the presence of delicate upstanding structures in rows along the borders of the pseudo-tracheal canals on the distal half of the ventral surface of the labellum, and pseudo-tracheal canals wide, well strengthened by broad half hoops in the distal areas, as well as being reduced in number. For the type species *rivosa* there are 7 on each half of the labellum. Although the broad half hoops of the pseudo-tracheal canals can be readily seen, the structures bordering them are delicate and best shown on scanning electron micrograph (Broadhead, 1984).

In *Homoeominettia* and *Poecilominettia* the half hoops in the outer area of the labellum are not wider than those of the basal area, and the structures associated with fungal grazing are well sclerotised and very easily observed.

Certain species currently placed in *Minettia* do not fall within the definition of the genus and are here transferred to other genera. Two species, *tinctinervis* Malloch, 1926 (**comb. n.**) and *fuscinervis* Malloch, 1926) (**comb. n.**) are here placed in *Floriminettia* gen. n., described below.

Three other species, *geniseta* Malloch, 1926, *approximata* Malloch, 1928 and *assimilis* Malloch, 1926, were somewhat tentatively placed in *Deutominettia* by Malloch, although *geniseta* and *assimilis* were originally placed by him in *Minettia*. All three do not have the striking feature of the genus *Deutominettia*, namely a haired scutellar disc. They have a shining face and long plumes on the arista (features not characteristic of the genus *Minettia*). For them I propose to erect *Homoeominettia* gen. n., also described below.

Two further species currently in *Minettia*, *bruneicosta* Malloch 1928, and *quadrata* Malloch, 1928, do not fall within the definition of the genus *Minettia* s.str. in respect of the position of the ocellar bristles. In addition, although the labellum has a reduced number of pseudo-tracheal canals with upstanding structures on the distal area, the supporting half hoops are not broad as they are in *rivosa*. I now place these two species (**comb. n.**) in *Poecilominettia* along with 51 of the new species described in this paper. *Poecilominettia* was erected by Hendel (1932) for certain Central American species that differed from *Minettia* s.str. in that their anterior orbital bristles are closer to the anterior border of the frons than to the second orbital bristles, that the ocelli are arranged in an isosceles triangle with the sockets of the ocellar bristles close together and well behind the anterior ocellus, and that the ocellar bristles are short and divergent. The type species is *picticornis* Coquillet, 1898.

I propose to add two further characters to this diagnosis, namely, the presence of upstanding structures in rows along the borders of the pseudo-tracheal canals on the distal half of the ventral face of the labellum, and pseudo-tracheal canals wide, ranging in number from 9 to 12 on each half of the labellum, the number being constant for each species (Figs 14, 15).

The shape of the ocellar triangle is probably of less significance here than the position of the ocellar bristles on it, i.e., in *Poecilominettia* the ocellar bristles are situated about half-way between the anterior and posterior ocelli, the space between them varying with the shape of the triangle formed by the three ocelli. Hendel (1932) transferred a number of species from *Minettia* to *Poecilominettia* which do in fact have ocellar triangles varying from isosceles to equilateral, but whose ocellar bristles always have their sockets within an imaginary line drawn from the outer face of the anterior to the posterior ocellus and situated at least half-way between the anterior and posterior ocelli.

KEY TO THE GENERA *POECILOMINETTIA*, *FLORIMINETTIA* AND *HOMOEOMINETTIA*

1 Fronto-facial angle about 90°. Anterior orbital bristle equidistant from anterior border of frons and posterior orbital bristle. Labellum with 20 narrow pseudo-tracheal canals on each half, which do not bear any upstanding structures . ***FLORIMINETTIA***

– Fronto-facial angle obtuse. Anterior orbital bristle nearer to anterior border of frons than to posterior orbital bristle. Labellum with considerably fewer, wide pseudo-tracheal canals on each half, bearing upstanding structures on their borders on distal area 2

2 Ocellar bristles long, almost parallel and directed forwards. Arista with long plumes. Yellow flies without dark markings on face, frons or scutellum. Body length not less that 5.5 mm . . ***HOMOEOMINETTIA***

– Ocellar bristles short and divergent. Arista more frequently with short hairs, but if with long plumes, then distinct black markings on face, frons and scutellum, and thorax with black stripes. Predominantly yellow flies. Body length 4.5 mm or less. ***POECILOMINETTIA***

FLORIMINETTIA gen. n.

TYPE SPECIES: *Floriminettia coronata* sp. n.

DIAGNOSIS. An intra-alar bristle, anterior part of frons drawn out to form a small peak between antennal bases, face shining centrally with silvery dusting at eye margin, labellum with 20 narrow pseudo-tracheal canals on each half, without any upstanding structures on their borders, wings with veins outlined, arista with hairing of medium length, ocellar bristles placed well behind anterior ocellus and fairly close together.

Key to species of *Floriminettia*

1 Scutellum with black spots at apex. One large triangular spot centrally on 5th abdominal tergite. Wings with costal infuscation and all other veins strongly outlined ***fuscinervis*** (Malloch)

– Scutellum without marks at apex 2

2 3rd antennal segment oval, twice as long as wide. Two lateral spots on 5th abdominal tergite. Wings with costal infuscation and all other veins strongly outlined ***tinctinervis*** (Malloch)

– 3rd antennal segment tapering, three times as long as width at base. No spots on abdominal tergites. Wings without costal infuscation and all veins distinct but yellow 3

3 Thorax with central brown stripe and broken stripe on either side. Anterior part of frons produced upwards centrally at antennal bases. Body length 6 mm ***ficulnea*** sp. n.

– Thorax not striped. Anterior part of frons barely produced upwards at antennal bases. Body length 7 mm ***coronata*** sp. n.

Floriminettia coronata sp. n.

Large yellow fly. Body length 7 mm. All bristles strong.

Head yellow with face keeled centrally. Frontofacial angle about 90°. Frons wider anteriorly and drawn out to form small peak between antennal bases. Antennal segments 1 and 2 slightly longer than wide, segment 3 long-oval (3 times width) and covered with hairs, the dorsal ones being half width of segment. Aristal hairs medium long. Orbital plates shining, closer together anteriorly than posteriorly. Anterior orbital bristles shorter than posterior. Ocellar plate yellow. Face shining centrally, with silver dusting along eye margin. Eyes red, oval. Palps yellow. Labellum with 20 narrow pseudo-tracheal canals on each half which do not bear any upstanding structures. Thorax unstriped, orange-yellow with scutellum paler and edged with fine dark border. Acrosticals in 8 rows. Prescutellars reaching as far as scutellum apex. Wings slightly smoky yellow, veins dark yellow. Legs yellow. Four postero-ventral bristles, 5 postero-dorsals, 3 nearly true dorsals on femur 1; 6 very sturdy short bristles antero-ventrally on apical half and one posterior bristle apically on femur 2; 4 strong proclinate bristles antero-ventrally on femur 3. Ring of strong spines apically on tibia 2. Dorsal pre-apical of tibia 2 much stronger than that of other tibiae. Abdomen same colour as thorax without marks dorsally, other than fine darkened borders posteriorly on tergites. Paler ventrally and sparsely haired. Ring sclerite (7th abdominal segment) yellow.

Male genitalia (Fig. 13E, F). Clasper small with hooked tip. Hypandrium with long pointed processes. Aedeagus bilobed at tip and containing very small spines. No mark on epandrium.

Female similar to male.

HOLOTYPE. ♂, **Barro Colorado Island:** iii. 1983, light-trap (BMNH).

PARATYPES. **Panama**: 4 ♂, Panama City end of Panama canal, vii. 1979, fogging high canopy; 2 ♂, Barro Colorado Island, xi. 1982, light-trap, v. 1983; 1 ♀, Barro Colorado Island, x. 1982, light-trap (all BMNH).

Floriminettia ficulnea sp. n.

Yellow fly. Body length 6 mm. All bristles strong.

Head yellow with face keeled centrally, shining but with silver dusting along eye margin. Frontofacial angle about 90°. Frons wider anteriorly and produced upwards at antennal bases, and drawn out to form small peak between antennal bases. Antennal segments 1 and 2 slightly longer than wide, segment 3 long-oval and tapering (3 times width at base) and covered with hairs. Arista with short hairs. Anterior orbital bristle shorter than posterior. Orbital plates shining, closer together anteriorly than posteriorly. Ocellar plate yellow. Ocellar bristles short, divergent. Frons orange-

yellow. Palps yellow. Labellum with 20 pseudo-tracheal canals on each half which do not bear any upstanding structures. Thorax with a central brown stripe and a broken stripe on either side. Acrosticals in 12 irregular rows. Prescutellars reaching to the apex of the scutellum. Wings faintly yellowish with veins yellow. Legs yellow. Femur 1 with 7 bristles irregularly on row curving from postero-dorsally at base to dorsally at apex and 6 bristles posteriorly; femur 2 with 6 bristles antero-ventrally, one strong posterior bristle, a row of long hair-like bristles on apical half, 6 bristles irregularly antero-ventrally; femur 3 with a row of hair-like proclinate bristles on apical half, and one strong bristle postero-dorsally near apex. Tibia 2 with dorsal pre-apical, ventral apical bristle and apical spines all very strong. Abdomen yellow, without marks.

Male genitalia not dissected, since holotype somewhat fragile.

Female similar to male.

HOLOTYPE. ♂, **Panama**; Barro Colorado Island, ex fruit of wild *Ficus*, x. 1937 (Zetek no. 4421, Lot no. 39 11659) (USNM).
PARATYPE. 1 ♀, same data as holotype.

These two specimens are labelled in pencil '*Nimettia immaculata* type' but without any author's name. They do not exhibit the characters of the genus *Nimettia* and clearly are closely related to the other species of *Floriminettia*.

HOMOEOMINETTIA gen. n.

TYPE SPECIES. *Deutominettia assimilis* Malloch, 1926.

DIAGNOSIS. An intra-alar bristle, face shining, arista with long plumes, anterior orbital bristle nearer to anterior border of frons than to second orbital bristle, length of third antennal segment at least 2.5 times width, ocellar bristles long, almost parallel and directed forwards, their sockets situated about half-way between anterior and posterior ocelli and well separated, ocelli arranged in an isosceles triangle, spines usually present on mid tibia postero-ventrally, labellum with reduced number of pseudo-tracheal canals bearing upstanding structures on distal half of ventral surface.

Key to species of *Homoeominettia*

1 Abdomen with dark markings on tergites. No spines postero-ventrally on mid tibia. Third segment of antenna long oval (3 times width). Body length 8 mm ***woldae*** sp. n.

– Abdomen without markings. Spines present postero-dorsally on mid tibia. Third segment of antenna shorter, oval (2.5 times width). Body length about 5.5 mm 2

2 Three or four long spines on mid tibia postero-ventrally ..... ***assimilis*** (Malloch)
– Seven to nine short spines on mid tibia postero-ventrally 3

3 Wings with distinct clouds on cross-veins ***appoximata*** (Malloch)
– Wings without clouds on cross-veins ***geniseta*** (Malloch)

Homoeominettia woldae sp. n.

Large dark yellow fly, lightly grey-dusted. Body length 8 mm.

Head with face profile almost flat. Fronto-facial angle obtuse. No marks on face or frons. Ocellar plate darkened. Palps dark yellow. Antenna yellow, segment 3 long-oval (3 times width), with long plumes on arista. Labellum elongate heart-shaped with 16 pseudo-tracheal canals on each half. Thorax with 3 thin dark stripes. Acrosticals in 12 irregular rows. No spots on scutellum. Prescutellars reaching to just over half-way to apex of scutellum. Thoracic segments finely bordered in black. Halteres yellow. Wings dark yellow with costal streak continued into vein 4, half-way to outer cross-vein, and with brown round spots on cross-veins. Legs dark yellow; 6 bristles postero-dorsally and 6 postero-ventrally on femur 1; 5 short stout bristles antero-ventrally on femur 2; row of hairs apically antero-ventrally on femur 3. Abdomen dark yellow with 3 triangular marks and dark posterior borders on all but anterior tergite. Very pale ventrally. Ring sclerite dark, complete.

Male genitalia small (Fig. 5A). Epandrium without black spot. Clasper with two-clawed tip. Hypandrium with 2 processes. Aedeagus with rods inside and small hook dorsally some distance from tip.

Female similar to male with genital segments all yellow.

HOLOTYPE. ♂, **Panama**: Fortuna, vii. 1976, from light-trap (BMNH).
PARATYPES. **Panama**: 2 ♂, 7 ♀, same data but xi. 1976, i. 1977, iii. 1977, x. 1977, vii. 1978, x. 1978, iv. 1979 (BMNH).

POECILOMINETTIA Hendel

Type species: *Sapromyza picticornis* Coquillet, by monotypy.

Key to species of *Poecilominettia* from Panama and neighbouring regions

1 At least segment two of antenna black, thorax distinctly striped 2
– All segments of antenna yellow or yellowish, thorax striped or not striped 14

2 Two basal segments of antenna black 3
– Only segment two of antenna black, palps yellow, no stripes on sternopleuron or mesopleuron (Barro Colorado Island) ..... ***fungivora*** sp. n.

3 Wings with conspicuous markings in addition to clouding over cross-veins . ***tripuncticeps*** (Malloch)
– Wings unmarked apart from possible clouding over cross-veins 4

4 Six thoracic stripes ..... ***breviplumata*** Hendel
– Four thoracic stripes 5

5 Arista with long plumes 6
– Arista with short hairs 7

6 Acrosticals in 10 rows, frons slightly longer than broad ..... ***picticornis*** (Coquillet)
– Acrosticals in 6 rows, frons slightly shorter than broad ..... ***sexiseriata*** Hendel

7 Thoracic stripes extending as far as apex of scutellum, even if faintly after suture 8
– Thoracic stripes not continuing as far as apex of scutellum 12

8 Small species (body length 2.0–2.5 mm) 9
– Larger species (body length 4 mm) (Fortuna) ***spinosa*** sp. n.

9 Thoracic stripes distinctly marked throughout entire length, no conspicuous black spines at base of aedeagus of male 10
– Thoracic stripes becoming fainter after suture, conspicuous black spines at base of aedeagus of male 11

10 No dark marks on lateral borders of abdominal sternites, clasper of male broad and delicate (Fig. 2A) (Barro Colorado Island) ..... ***trigona*** sp. n.
– Dark borders present laterally on last abdominal sternite, clasper delicate but less broad (Fig. 2B) (Barro Colorado Island) ..... ***membranosa*** sp. n.

11 Black spines at base of aedeagus of male as long as aedeagus (Fig. 4D, F) (Miramar) .... ***virgea*** sp. n.
– Black spines at base of aedeagus of male about one quarter of length of aedeagus (Fig. 4C) (Barro Colorado Island) ..... ***cornuta*** sp. n.

12 Palps dark at base only. Clasper of male produced to form two claws, the lower one broader and not curled. Hypandrium distinctly indented in centre (Fig. 4A) (Barro Colorado Island) .. ***epacra*** sp. n.
– Palps entirely black 13

13 Clasper of male very large, black and sickle-shaped (Fig. 3Fb) (Barro Colorado Island) . ***falcata*** sp. n.
– Clasper of male smaller, not black, produced to form two claws, the lower one with curled tip. Hypandrium almost flat centrally (Fig. 4B) (Barro Colorado Island) ..... ***cordata*** sp. n.

14 Thoracic stripes distinct 15
– Thoracic stripes absent or at most very faint ... 18

15 Wings with distinct marks in addition to clouding on cross-veins ..... ***octovittata*** (Williston)
– Wings unmarked apart from clouding on cross-veins 16

16 Pleurae with stripes ..... ***valida*** (Walker)
– Pleurae without stripes 17

17 Palps yellow, abdominal tergites with dark posterior borders and central marks. Clasper of male large, wider than long, aedeagal internal spines very convoluted (Fig. 3A) ..... ***zebroides*** Hendel
– Palps black. Abdominal tergites without dark posterior borders, but with central marks. Clasper of male rounder (Fig. 2F), aedeagal spines less convoluted (Fig. 3A) (Barro Colorado Island) ***silbergliedi*** sp. n.

18 No marks on scutellum 19
– Two black marks at apex of scutellum which may continue underneath. No mark on face 31

19 Black central mark on face 20
– No mark on face 23

20 Wings extensively marked (Fig. 1), greyish yellow species with single central dark spot on each of last three abdominal tergites. Body length 4.25 mm. (Fortuna) ..... ***fumida*** sp. n.
– Wings unmarked apart from any clouding on cross-veins. Body length 2.0–2.5 mm. 21

21 Abdominal tergites with dark posterior bands. Head with labrum slightly projecting (Fig. 1A) (Fortuna) ***fortunae*** sp. n.
– Abdominal tergites without dark posterior bands. Male genitalia distinctive: aedeagus with one projecting spine and numerous strongly sclerotised internal spines (Fig. 6B, C) 22

22 Male clasper with sclerotised tooth basally, epandrial black spot long-oval, hypandrium with four processes (Fig. 6C) (Barro Colorado Island) ***sentosa*** sp. n.
– Male clasper without sclerotised tooth, epandrial black spot chevron-shaped, hypandrium with two processes (Fig. 6B) (Barro Colorado Island) ***pygmaea*** sp. n.

23 Wings strongly yellow 24
– Wings not yellow 25

24 Ring sclerite of male black, conspicuous and complete (Fig. 12E), tip of clasper pointed (Fig. 5E) (Fortuna) ..... ***circularis*** sp. n.
– Ring sclerite of male black, less conspicuous and incomplete (Fig. 12F), tip of clasper rounded (Fig. 5F) (Fortuna) ..... ***ungulata*** sp. n.

25 Wings with distinct dark markings. Extreme apices of hind femur black. Male genitalia as in Fig. 5B (Fortuna) ..... ***nigriapica*** sp. n.

– Wings not marked apart from possible clouding on cross-veins 26

26 Very small species (body length 2.5 mm) 27
– Larger species (body length 4.0–4.5 mm) 28

27 Arista bare. Male genitalia as in Fig. 6D (Gatun) ..... ***silvicola*** sp. n.
Arista with short hairs. Male genitalia as in Fig. 13B, C. (Gatun) ..... ***gatuna*** sp. n.

28 Abdominal tergites with posterior dark bands. Male genitalia as in Fig. 1D (Fortuna) .... ***obtusa*** sp. n.
– Abdominal tergites without posterior dark bands. 29

29 Thorax with indistinct stripes not reaching beyond second dorso-central bristle. Male genitalia as in Fig. 5C. (Fortuna) ..... ***lineolata*** sp. n.
– Thorax without stripes 30

30 Frons as long as broad ..... ***unicolor*** Hendel
– Frons broader than long ..... ***chilensis*** (Schiner)

31 Wing with very dark costal area becoming less dark posteriorly ..... ***bruneicosta*** (Malloch)
– Wing not thus 32

32 Wing with seven large dark marks ***quadrata*** (Malloch)
– Wing not thus 33

33 Wing yellow. Abdominal tergites with narrow dark bands posteriorly. Scutellum finely bordered in black. Male genitalia as in Fig. 5D (Fortuna) ***circumtexta*** sp. n.
– Wing hyaline, at most, cross-veins slightly clouded 34

34 Black marks at tip of scutellum very small (less than twice diameter of bristle socket) and distinctly circular in shape ..... ***grata*** (Wiedemann)
– Black marks at tip of scutellum much larger and more irregular in shape (Barro Colorado Island) ***effossa*** group

Key to species of the *effossa* group in the Panama Canal area

Males only

These 29 species have been obtained from the light-trap on Barro Colorado Island. Two of them have also been obtained from fogging the high canopy, *membranosa* from the Atlantic end, *flavescens* from both the Atlantic and Pacific ends of the Panama Canal. These 29 closely related species of *Poecilominettia* have been assigned to the *effossa* group on the basis of the following characters: ocellar bristles short, divergent, with their sockets situated half-way between anterior and posterior ocelli, short hairs on arista, body colour yellow without markings except for two black spots at apex of scutellum and one on epandrium.

1 Clasper delicate, without dark sclerotisation 2
– Clasper with dark sclerotisation 5

2 Clasper widening out from base (Fig. 11A, D) .. 3
– Clasper not widening out from base (Fig. 7G) .. 4

3 Group of bristles at base of clasper (Fig. 11A) ***papillata*** sp. n.
– No bristles present at base of clasper (Fig. 11D) ***foliacea*** sp. n.

4 Hypandrium with three processes (Fig. 7G) **fimbriata** sp. n.
– Hypandrium with two short processes (Fig. 7L) ***semilunata*** sp. n.

5 Claspers, in natural position, with sclerotised edge of one forming, along with that of the other, a distinctive scalloped border (Fig. 7M) ..... ***effossa*** sp. n.
– Claspers not thus 6

6 Clasper curved, with long axis lying in two planes 7
– Clasper not thus 11

7 Group of two or three strong spines at base of clasper (Fig. 8A, C) 8
– No spines present at clasper base (Fig. 10F) ***chelata*** sp. n.

8 Hypandrium with two processes and indentation centrally 9
– Hypandrium with three processes 10

9 Clasper pointed at tip, aedeagus large, containing a number of sclerotised rods. No mark on frons ***maniculata*** sp. n.
– Clasper not pointed, aedeagus smaller, containing rows of small spines. Frons with dark mark on anterior edge (Fig. 8C, F) ..... ***notata*** sp. n.

10 The three processes of hypandrium very short and of equal length (Fig. 8H) ..... ***plicata*** sp. n.
– Outer processes of hypandrium longer than central one and bearing small spines (Fig. 8I). ***flavescens*** sp. n.

11 Clasper tip pointed 12
– Clasper tip rounded 23

12 Hypandrium with six processes, two pairs pointing anteriorly and one curved pair pointing posteriorly (Fig. 11G) ..... ***sexiprojecta*** sp. n.
– Hypandrium with fewer than six processes 13

13 Hypandrium with four processes 14
– Hypandrium with fewer than four processes ... 15

14 Central pair of processes of hypandrium about half length of outer pair which are straight (Fig. 8G) ***quadriprojecta*** sp. n.
– Central pair of processes of hypandrium less than one-quarter length of outer pair which are curved inwards (Fig. 10I) ..... ***erymna*** sp. n.

15 Hypandrium with three processes 16
– Hypandrium with two processes 19

16 Central process of hypandrium short, the outer pair curving outwards (Fig. 9K) ..... ***curvata*** sp. n.
– Central process of hypandrium almost as long as outer pair or considerably longer 17

17 Outer processes of hypandrium approximately same length as central one which is lobed (Fig. 8K). Outer processes without spines. Aedeagus, when extended, with two laterally projecting spines (Fig. 8L) ..... ***vibrata*** sp. n.
– Outer processes of hypandrium much shorter than central one. Outer processes each with subterminal spine (Fig. 12C, D) 18

18 Outer processes of hypandrium narrowly pointed, spines not projecting beyond apex of process (Fig. 12D). Clasper curved, and with sclerotised tip (Fig. 12B) ..... ***acuta*** sp. n.
– Outer processes of hypandrium less narrowly pointed, spines projecting beyond apex of process (Fig. 12C). Clasper not curved and tip not sclerotised (Fig. 12A) ..... ***folleata*** sp. n.

19 Processes of hypandrium visible in lateral view (Fig. 11H), clasper with three small spines at base (Fig. 11I) ..... ***parouatia*** sp. n.
– Processes of hypandrium not visible in lateral view 20

20 The two processes of hypandrium well separated 21
– The two processes of hypandrium close together and curved (Fig. 9A) ..... ***uncata*** sp. n.

21 Abdominal sternites with bristles sparse and small (Fig. 9I) 22
– Abdominal sternites with bristles denser and larger (Fig. 9J) ..... ***pectinata*** sp. n.

22 Processes of hypandrium long and with one bristle on outer face (Fig. 9G) ..... ***calva*** sp. n.
– Processes of hypandrium disposed outwards and with two bristles on outer face (Fig. 10H). ***aurita*** sp. n.

23 Genitalia large and striking. Hypandrium with roughly triangular processes visible from dorsal view (Fig. 6E, F) ..... ***enormis*** sp. n.
– Genitalia not thus 24

24 Epandrial black spot square in shape 25
– Epandrial black spot not square in shape, the anterior edge narrower than posterior 26

25 Clasper with broad darkly sclerotised border (Fig. 6A) ..... ***legnota*** sp. n.
– Clasper with only a very small area of dark sclerotisation (Fig. 10A), small protuberance at clasper base ***biprojecta*** sp. n.

26 Clasper very large and broadening out from the base (Fig. 8M) ..... ***remata*** sp. n.
– Clasper not thus 27

27 Clasper with domed tip and sclerotised tooth lower down (Fig. 7C) ..... ***fornicata*** sp. n.
– Clasper not domed 28

28 Clasper broadly truncate at tip (Fig. 10D). The two processes of hypandrium short and indented at tip (Fig. 10D) ..... ***lagenata*** sp. n.
– Clasper rounded at tip with subterminal sclerotised area. The two processes of hypandrium elongate and directed ventrally. Aedeagus foot-shaped. (Fig. 7A, B, D, E) ..... ***pedata*** sp. n.

Descriptions of new species of *Poecilominettia*

In all species the dorsal pre-apical bristle and the ventral apical bristle of the mid tibia are very much stronger than those of the other tibiae. In addition, the mid tibia has a ring of short but strong spines at the apex. Where only one specimen was available, the labellum was not removed so that the exact number of pseudo-tracheal canals could not be counted. The structural modifications of the labellum could nevertheless be easily seen under the microscope. The number of sternopleural bristles is always 2.

Poecilominettia acuta sp. n.

Small yellow fly. Body length 3 mm.

Head yellow with distinct dark mark below eye on cheek. Fronto-facial angle obtuse. Head not shining except orbital and ocellar plates. Eyes green. Palps yellow. Labellum slightly elongated heart-shaped. Antennal segments all yellow. Aristal hairs short. Thorax orange-yellow, unstriped. Acrosticals in 6 rows. Prescutellar bristles reaching to over half-way to apex of scutellum. Scutellum paler, especially at tip. Two scutellar spots mainly below, with narrow dark border in between. Halteres yellow. Wings faintly yellowish with cross-veins only very slightly darkened. Legs paler; femur 1 with 7 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 bristles posteriorly, and 5 long bristles postero-ventrally; femur 2 with 6 strong short spines antero-ventrally and one bristle posteriorly at apex; femur 3 with 5 proclinate hairs apically antero-ventrally. Abdomen paler orange-yellow. Bristles all delicate. Dorsally the anterior half of tergites bare and posteriorly the small bristles irregularly arranged. Posterior rims not darkened.

Male genitalia. Epandrial black spot roughly square. Clasper with sclerotised pointed tip and curved over at base (Fig. 12B). Hypandrium with 3 processes, central one long and pointed (Fig. 12D), and outer pair each with a bristle. Aedeagus elongated, narrow but enlarged somewhat at tip and containing many fine sclerotised rods.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, ii.1983, light-trap (BMNH).
PARATYPE. 1 ♂, same data.

Poecilominettia aurita sp. n.

Yellow fly. Body length 4 mm.

Head yellow without markings except brownish patch below eye and darkened mouth rim on

labrum. Eyes red. Head not shining except ocellar and orbital plates. Fronto-facial angle obtuse, facial profile slightly convex. Palps yellow. Labellum, elongated heart-shaped. All antennal segments yellow. Aristal hairs short. Thorax strong orange-yellow. Acrosticals in 6 rows. Prescutellar bristles reaching to over half-way to apex of scutellum. Scutellum not paler except at extreme apex, with two black spots at tip which is pointed between apical bristles. Halteres yellow. Wings yellowish with veins yellow and cross-veins darkened. Legs yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 posteriorly, and 6 long bristles postero-ventrally; femur 2 with 4 strong bristles anteriorly and 1 posteriorly at apex; femur 3 with 6 proclinate hairs apically antero-ventrally. All bristles strong. Abdomen paler than thorax. No marks but a noticeable banding effect produced by absence of bristles on anterior half of tergites.

Male genitalia. Epandrial black spot approximately square. Clasper with sclerotised tip and group of spines at base (Fig. 13Aa). Hypandrium with two widely separated processes (Fig. 10H) bearing spines. Aedeagus flat and broad at tip and containing bent rods (Fig. 13Ab)

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, xii.1982, light-trap (BMNH).

Poecilominettia biprojecta sp. n.

Small bright yellow fly. Body length 3 mm.

Head yellow, not shining, except ocellar and orbital plates. Fronto-facial angle obtuse. Face profile slightly convex. No marks except slightly darkened anterior border of frons. Eyes red and round. Antennal segments all yellow. Aristal hairs short. Palps yellow. Labellum oval in shape with 9 pseudotracheal canals on each half. Thorax orange-yellow with two faint brown stripes, reaching as far as suture. Acrosticals in 6 rows. Prescutellar bristles reaching to apex of scutellum. Scutellum not paler, with the two apical black spots mainly below. Halteres pale yellow. Wings faintly yellow with veins yellow. Distinct I-shaped marks on cross-veins surrounded by clouds. Legs pale yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 4 small bristles posteriorly, 5 long bristles postero-ventrally; femur 2 with 6 strong short spines anteriorly, 1 bristle posteriorly at apex; femur 3 with 5 proclinate hairs antero-ventrally. Abdomen paler than thorax. No marks. Ventrally paler still with small delicate bristles on sternites.

Male genitalia. Epandrial black spot roughly square. Clasper somewhat rounded with protuberance at base bearing spines (Fig. 10A). Hypandrium with two processes pointing laterally and with bristles on outer face (Fig 10C). Aedeagus broad, delicate, containing several delicate rods.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, ii.1983, light-trap (BMNH).

Poecilominettia calva sp. n.

Yellow fly. Body length 4.25 mm.

Head not shining except ocellar and orbital plates. Fronto-facial angle obtuse. Face profile slightly convex. Eyes shot red-green. Palps yellow. Labellum slightly pointed heart-shaped with 9 pseudotracheal canals on each side. Brownish mark on labrum at mouth rim. All antennal segments yellow. Aristal hairs short. Thorax orange-yellow. Acrosticals in 6 rows. Prescutellar bristles reaching to apex of scutellum. Halteres yellow. Wings yellowish. All veins yellow. Legs pale yellow with distal rim of tibiae darkened. Femur 1 with 8 bristles on row curving from postero-dorsally at base to dorsally at apex, 9 short bristles posteriorly, and 6 long bristles postero-ventrally; femur 2 with 5 short, stout spines antero-ventrally and 1 bristle posteriorly at apex; femur 3 with 7 proclinate hairs apically antero-ventrally. Abdomen with posterior segments darkened. Rims of tergites not dark. Sternites sparsely haired (Fig. 9I).

Male genitalia. Epandrial black spot roughly square. Clasper small with tip sclerotised (Fig. 9C). Hypandrium with short central process and pair of long outer curved processes bearing a spine (Fig. 9Gb). Aedeagus large, flat at tip and containing sturdy spined rods (Fig. 9Ga).

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, ii.1983, light-trap (BMNH).
PARATYPES. 9 ♂, same data but also i.1983, (BMNH).

Poecilominettia chelata sp. n.

Yellow fly. Body length 3.75 mm.

Head yellow, not shining except ocellar and orbital plates. Fronto-facial angle obtuse. Face profile flat. No marks on frons. Ocellar plate yellow. Eyes red shot green. Antennal segments all yellow. Aristal hairs short. Palps yellow. Labellum slightly elongate heart-shaped with 8 pseudo-tracheal canals on each half. Thorax orange-yellow with two faint thin stripes reaching as far as scutellum. Scutellum with two black spots, mainly underneath. Prescutellars reaching

to tip of scutellum. Acrosticals in 6 rows. Wings slightly smoky with cross-veins darker. Legs yellow, not pale; femur 1 with 5 bristles postero-dorsally, 6 long bristles postero-ventrally, and 5 shorter bristles posteriorly; femur 2 with 5 short stout spines antero-ventrally and 1 bristle posteriorly at apex; femur 3 with 6 proclinate hairs apically antero-ventrally. All bristles strong. Abdomen same colour as thorax. No marks on tergites but with brown posterior rims on segments 3, 4 and 5.

Male genitalia (Fig. 10F, G). Epandrial black spot narrow, widening posteriorly (Fig. 10Fa). Clasper very thin, long and claw-like (Fig. 10Fb). Aedeagus (Fig. 10Fc) with sac rounded at tip and containing rods and small spines. Hypandrium (Fig. 10G) with 2 short processes.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, i.1983, light-trap (BMNH).
PARATYPES. 2 ♂, same data but i., iv.1983 (BMNH).

Poecilominettia circularis sp. n.

Dull dark yellow fly with grey dusting. Body length 4.5 mm.

Head dark yellow with grey dusting. Face profile flat. Fronto-facial angle obtuse. No central spot on face, but dark mark below eye on cheek, and darkened mouth rim. Palps pale yellowish. Labellum with 10 pseudo-tracheal canals on each half. Antennal segments all yellow. Aristal hairs short. Frons with central yellow stripe, darker stripe on either side. Ocellar plate dark. Thorax yellow with 4 greyish brown stripes, the inner pair extending as far as suture, the outer pair half-way to suture. Acrosticals in 10 rows. Prescutellars reaching to just over half-way to scutellum apex. All bristles strong. All segments finely edged black. Wings yellow. Legs yellow, femora paler than rest; femur 1 with 4 strong bristles postero-ventrally, 6 on row curving from postero-dorsally at base to dorsally at apex, 6 posteriorly; femur 2 with strong short spines antero-ventrally and 1 bristle posteriorly towards apex; femur 3 without proclinate hairs apically antero-ventrally; tibia 2 with dorsal pre-apical and ventral apical bristles very strong and with ring of spines at apex. Abdomen with distinctive markings: central line and roughly triangular marks laterally, and black posterior rim on tergites, the marks becoming progressively thinner towards posterior. Ventral surface pale with yellow sternites. Ring sclerite very distinct, black and quite complete (Fig. 12E).

Male genitalia (Fig. 5E). Epandrial black spot almost square. Clasper large with fine pointed sclerotised tip. Aedeagus short with rounded tip and containing central spine and other structures. Hypandrium with two sclerotised processes.

HOLOTYPE. ♂, **Panama**: Fortuna, ii.1978, light-trap (BMNH).
PARATYPES. 2 ♂, same data; 3 ♀, same data but i., ii.1978, iv.1979 (BMNH).

Poecilominettia circumtexta sp. n.

Small yellow fly. Body length 3.5 mm.

Head orange-yellow, not shining. Mouth rim darkened. Fronto-facial angle obtuse. Slightly darker stripe between eye margin and facial small hairs. Ocellar plate darkened. Antennal segments all yellow, aristal hairs short. Palps yellow. Labellum with few pseudo-tracheal canals. Thorax orange with five faint stripes. Acrosticals in 8 rows. Scutellum with small spots apically, also outlined finely along anterior border. Prescutellars damaged in holotype. Wings suffused yellow, veins dark yellow. Knobs of halteres large, pale yellow. Legs yellow; femur 1 with 7 bristles on row curving from postero-dorsally at base to dorsally at apex, 6 posteriorly, 6 postero-ventrally; femur 2 with 6 short, stout spines antero-ventrally and 1 bristle posteriorly at apex; femur 3 with 4 proclinate bristles apically antero-ventrally; tarsus 3 with longer than usual scale-like hairs ventrally. Abdomen with tergites distinctly bordered black posteriorly. Ventrally paler with sternites well bristled. Ring sclerite yellow.

Male genitalia (Fig. 5D). Epandrial black spot roughly triangular. Clasper blunt, somewhat square at edge (Fig. 5Dc). Hypandrium sclerotised, presenting a shallow curved outline when viewed from posterior position. Aedeagus beak-like, sturdy (Fig. 5Db).

HOLOTYPE. ♂, **Panama**: Fortuna, ix.1976, light-trap (BMNH).

Poecilominettia cordata sp. n.

Yellow fly with black thoracic stripes. Body length 3 mm.

Head yellow, not shining except orbital plates. Face profile flat. Fronto-facial angle obtuse. Square black spot centrally on face at mouth rim. Diffuse brown mark on frons. Ocellar plate dark. Antennal segments 1 and 2 black, 3 yellow with hairs on arista medium short. Palps dark. Labellum with reduced number of canals not counted. Thorax bright orange with 2 stripes on pleurae, 4 stripes on dorsum, the outer pair very short, less than half-way to suture, inner pair

faint, terminating at anterior dorso-central bristle. Acrosticals in 6 rows. Halteres pale. All bristles strong. Scutellum pale with 2 black spots continued underneath. Wings slightly smoky with veins yellow. Legs pale yellow. Femur 1 with 5 bristles dorsally, 4 posteriorly, and 6 postero-ventrally; femur 2 with 6 sturdy short spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 6 proclinate hairs apically antero-ventrally. Tibia 3 with dark mark at base. Abdomen with narrow triangular marks and dark lateral borders present on last 3 segments. Central dark marks also on last 2 segments. Sternites without dark borders. Hairing on sternites short, delicate, except laterally where hairs are longer.

Male genitalia (Fig. 4B). Epandrial black spot long oval. Clasper yellow with fine point dorsally, curved to form short hook ventrally (Fig. 4Ba). Hypandrium almost flat anteriorly (Fig. 4Bc). Aedeagus with bilobed tip and containing straight rods (Fig. 4Bb).

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, xii.1982 (BMNH).

Poecilominettia cornuta sp. n.

Small yellow fly with striped thorax. Body length 2.5 mm.

Head yellow. Face profile flat. Fronto-facial angle obtuse. Square black spot on face. Brown mark on frons short distance from anterior edge. Palps dark. Labellum with 6 wide pseudo-tracheal canals on each half. Ocellar plate dark. Antennal segments 1 and 2 black, 3 yellow with aristal hairs of medium length. Thorax with 2 stripes across pleurae, 4 stripes on dorsum - outer pair dark and distinct as far as half-way to suture, inner pair becoming faint at same level as outer but continuing to apex of scutellum. Scutellum with 2 black spots at tip. Pre-scutellars short - reaching only half-way to scutellum apex. Acrosticals in 6 rows. All bristles rather delicate. Wings hyaline, veins yellow. Legs pale yellow; femur 1 with 5 bristles on row curving from postero-dorsally at base to dorsally at apex, 4 bristles posteriorly, 6 postero-ventrally; femur 2 with 4 short strong spines antero-ventrally and 1 bristle posteriorly at apex; femur 3 with 3 proclinate hairs apically antero-ventrally. Tibia 3 with dark mark at base. Abdomen yellow. Last 3 segments with dark central lines flanked by laterally placed triangular marks as well as spots on lateral borders. No marks ventrally.

Male genitalia. Epandrial black spot elongate rectangular. Clasper with curved edge between two tooth-like sclerotised points (Fig. 4Cb). Aedeagus containing rods which fan out when aedeagal sac is extended (Fig. 4Ca), 2 short and very sturdy rods curved at base of aedeagus (Fig. 4Cc). Hypandrium with anterior emargination (Fig. 4Cd).

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, ii.1983, light-trap (BMNH).
PARATYPES. 3 ♂, same data but x.1983 (BMNH).

Poecilominettia curvata sp. n.

Yellow fly. Body length 3.25 mm.

Head yellow with marks only on rim of labrum and below eye on cheek. Not shining except orbital and ocellar plates. Ocellar plate dark yellow. Eyes green. All antennal segments yellow. Aristal hairs short. Fronto-facial angle obtuse. Palps yellow. Labellum with wide pseudo-tracheal canals not counted. Thorax orange-yellow with three indefinite stripes, the outer pair short and reaching as far as suture. Acrosticals in 8 rows. Prescutellar bristles reaching just over half-way to apex of scutellum. Two black spots at tip of scutellum. Wings slightly smoky, veins yellow, cross-veins darkened. Legs yellow, femora more orange-yellow; femur 1 with 5 bristles on row curving from postero-dorsally at base to dorsally at apex, 4 short slightly curled bristles posteriorly, 5 long bristles postero-ventrally; femur 2 with 5 short sturdy spines antero-ventrally, 1 hooked bristle postero-dorsally at apex, as well as the usual pre-apical; femur 3 with 6 slender proclinate hairs apically antero-ventrally. Abdomen with first three segments paler than rest. Anterior third of each segment bristleless, posterior two-thirds with irregular bristling, giving a banded appearance. Tergites with distinct posterior rims but not darkened.

Male genitalia. Epandrial black spot square. Clasper small, sturdy, with sclerotised hooked tip (Fig. 9E). Hypandrium with 3 processes, central one short, rounded, the outer pair long, curving outwards (Fig. 9K). Aedeagus broad, blunt at tip and containing rods.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, ii.1983, light-trap (BMNH).

Poecilominettia effossa sp. n.

Orange-yellow fly. Body length 4 mm.

Head not shining except ocellar and orbital plates. Dark mark on labrum parallel to mouth rim. No marks on face or frons. Face profile almost flat. Fronto-facial angle obtuse. Palps yellow. Labellum heart-shaped with 10 pseudo-tracheal

canals on each side. Antenna all yellow with aristal hairs short. Thorax with one faint central stripe, narrow and dark, and an outer pair indeterminate. Acrosticals in 8 rows. Scutellum with 2 spots at tip. Pre-scutellars reaching almost to tip of scutellum. Scutellum pale. Wings slightly smoky, veins yellow, cross-veins not marked. Halteres yellow. Legs yellow. Femur 1 with 7 bristles on row curving from postero-dorsally at base to dorsally at apex, 6 posterior bristles, 6 long bristles postero-ventrally; femur 2 with twisted row of 6 short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 8 long proclinate hairs antero-ventrally apically. Abdomen with narrow dark posterior rims on tergites. No other marks except on genital segments. Ring sclerite distinct (Fig. 7Mc).

Male genitalia. Epandrial black spot narrow both anteriorly and posteriorly, broader in centre. Claspers, when viewed in natural position, presenting a scalloped edge (Fig. 7Mb). Hypandrium with 4 processes, the inner pair shorter than outer. Aedeagus (Fig. 7Md) containing sclerotised rods.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, ii.1983, light-trap, (BMNH).
PARATYPES. 9 ♂, same data but i.-iv.1983 (BMNH).

Poecilominettia enormis sp. n.

Yellow fly. Body length 3.75 mm.

Head as wide as thorax. Fronto-facial angle obtuse. Face profile slightly convex. Face not shining except ocellar and orbital plates. Frons darker than face. Antennal segments all yellow. Aristal hairs short. Eyes red shot green. Palps yellow. Labellum elongated, pointed heart-shaped with 10 pseudo-tracheal canals on each side. Thorax orange-yellow without marks. Acrosticals in 8 regular rows. Prescutellar bristles reaching to tip of scutellum. Scutellum paler with two black spots at apex. Halteres yellow. Wings very slightly smoky with cross-veins darkened. Legs yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 7 bristles posteriorly and 7 long bristles postero-ventrally; femur 2 with 7 upstanding short stout spines irregularly arranged on apical half antero-ventrally and 1 posterior bristle at apex; femur 3 with 5 strong proclinate bristles apically antero-ventrally. All bristles strong. Abdomen yellow, with fine dark borders posteriorly on tergites. Ventrally paler.

Male genitalia large and distinctive. Epandrial black spot oval (Fig. 6Fa). Clasper strong with sclerotised toothed area dorsally (Fig. 6Fd) and sclerotised rim ventrally (Fig. 6Eb). Aedeagus delicate, containing 2 small curved spines (Fig. 6Ec). Hypandrium with two broad flattened processes that fan out and are clearly visible without dissection (Figs 6Ea, Fb).

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, xii.1982, light-trap (BMNH).
PARATYPES. 3 ♂, same data but xi.1982, i.1983.

Poecilominettia epacra sp. n.

Yellow fly with striped thorax. Body length 3.25 mm.

Head with face profile slightly convex. Fronto-facial angle obtuse. Face yellow with greyish dusting, central almost square black spot, thin dark mark at mouth rim below eye. Frons dusted grey with brown central line. Ocellar plate dark yellow. Antennal segments 1 and 2 black, 3rd yellow with aristal hairs medium length. Palps dark at base. Labellum with 8 pseudo-tracheal canals on each half. Thorax with 2 stripes on pleurae and 4 on dorsum, the outer pair less than half way to suture, inner pair fainter and terminating after suture. Scutellum pale with 2 black spots at apex. Prescutellars reaching to just over half-way to apex of scutellum. Acrosticals in 6 irregular rows. All bristles strong. Wings yellowish, veins yellow. Legs pale yellow; femur 1 with 5 bristles postero-dorsally, 5 bristles posteriorly, 7 postero-ventrally; femur 2 with 6 short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 5 proclinate hairs at apex antero-ventrally. Tibia 3 with dark spot at base. Abdomen with thin black central line flanked by narrow, laterally placed triangular markings and with ventral edges of last 3 tergites darkened. Sternites without dark borders.

Male genitalia. Epandrial black spot long oval. Clasper with 2 sharp tips, one long and narrow, the other short (Fig. 4Aa). Hypandrium with 2 pointed processes (Fig 4Ac). Aedeagus pointed at tip and containing a pair of notched rods (Fig. 4Ab).

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, iii.1983, light-trap (BMNH).

Poecilominettia erymna sp. n.

Yellow fly. Body length 4 mm.

Head yellow, not shining except ocellar and orbital plates. Eyes green. No mark on frons or face except brownish spot below eye and slightly darkened mouth rim. Fronto-facial angle obtuse.

Face profile almost flat. Palps yellow. Ocellar plate yellow. Labellum heart-shaped with 9 pseudo-tracheal canals on each side. Antenna all yellow with aristal hairs short. Thorax not striped. Acrosticals in 8 rows. Prescutellars reaching beyond half-way to apex of scutellum. Scutellum only slightly paler than thorax, with a slight indentation on either side between scutellar bristles and apex. Two black spots at apex of scutellum continued underneath. Wings faintly yellow, unmarked. Legs yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 8 long bristles posteriorly, 5 long bristles postero-ventrally; femur 2 with 4 short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs antero-ventrally apically. Abdomen with thin dark posterior rim on tergites. Anterior half of segments clearly without bristles, posterior half with bristles, giving a banded appearance. Ventrally chalky with pale yellow sternites.

Male genitalia. Epandrial black spot roughly square. Clasper not curved (Fig. 9H). Hypandrium with 4 processes, the inner pair short, the outer pair longer and curved inwards (Fig. 10I). Aedeagus broad, blunt at tip and containing sturdy sclerotised rods.

Holotype. ♂, **Panama**: Barro Colorado Island, xi.1982, light-trap(BMNH).
Paratypes. 2 ♂, same data but xii.1982, iii.1983 (BMNH).

Poecilominettia falcata sp. n.

Yellow fly with striped thorax. Body length 3.5 mm.

Head yellow with face profile flat and face slightly hollowed on either side. Fronto-facial angle obtuse. Square black spot on face, mouth rim darkened. Broad black central line on frons. Ocellar plate dark. Palps black. Antennal segments 1 and 2 black, 3 yellow with aristal hairs medium long. Labellum with reduced number of pseudo-tracheal canals not counted. Thorax with 2 stripes on pleurae, 4 stripes on dorsum, the outer darker before suture, the inner pair fading at 2nd dorso-central bristle. Scutellum with 2 large black triangular spots. Acrosticals in 6–8 irregular rows. Prescutellars reaching only half-way to apex of scutellum. Wings slightly yellow with very distinct yellow veins. Halteres pale. Legs paler yellow. Femur 1 with 6 bristles antero-ventrally, 6 postero-ventrally, 6 on row curving from postero-dorsally at base to dorsally at apex; femur 2 with 6 short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 6 hairs antero-ventrally apically. Abdomen with striking black markings dorsally: central longitudinal line with long narrow triangular marks laterally which are continued round to ventral edge. Last 2 ventral sternites with dark borders.

Male genitalia with very heavily sclerotised scythe-shaped claspers which bear long spines on inner face and a hook basally (Fig. 3F). Epandrial black spot long and narrow. Hypandrium with one central process spanner-shaped and single short spine near lateral edge (Fig. 3G). Aedeagus containing sclerotised rods.

Holotype. ♂, **Panama**: Barro Colorado Island, x.1982, light-trap (BMNH).

Poecilominettia fimbriata sp. n.

Small yellow fly. Body length 2.75 mm

Head yellow, not shining except ocellar and orbital plates. Face profile flat. Fronto-facial angle obtuse. Ocellar plate yellow. No marks on frons or face except dull brown area below eye. Antennal segments all yellow. Aristal hairs short. Palps yellow, labellum slightly pointed, pseudo-tracheal canals reduced in number, not counted. Thorax yellow, not striped. Acrosticals in 8 rows. Scutellum with 2 black spots at tip mainly underneath. Wings faintly yellowed with cross-veins only slightly darkened. Halteres yellow. Legs clear yellow. Femur 1 with 5 long bristles postero-ventrally, 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 posteriorly; femur 2 with 4 short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs apically postero-ventrally. Abdomen without marks except on genital segments. Posterior rims of tergites pale.

Male genitalia. Epandrial black spot square. Clasper small, delicate, with curved tip (Fig. 7G). Aedeagus sac-like, containing very delicate structures (Fig. 7H). Hypandrium with 3 processes, the central one longer than others (Fig. 7K).

Holotype. ♂, **Panama**: Barro Colorado Island, i.1983, light-trap (BMNH).

Poecilominettia flavescens sp. n.

Yellow fly. Body length 3.75 mm.

Head dark yellow. Face profile slightly convex. Fronto-facial angle obtuse. Eyes green. Palps yellow. Labellum heart-shaped with 9 pseudo-tracheal canals on each half. No mark on frons. Face with brown mark at mouth rim below eyes. Antennal segments all yellow. Aristal hairs short. Ocellar plate yellow. Thorax with 3 narrow

brownish stripes, the central one reaching as far as scutellum. Acrosticals in 8 rows. Scutellum with 2 spots. Prescutellars reaching almost to apex of scutellum. All bristles strong. Scutellum slightly paler. Wings faintly yellowed, veins yellow, cross-veins slightly darkened. Halteres yellow. Legs yellow, femora strong yellow. Femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 6 posteriorly and 6 long bristles postero-ventrally; femur 2 with 6 short sturdy spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 3 long proclinate hairs antero-ventrally at apex. Abdomen without central marks on tergites. Posterior rims orange-yellow. Segments with anterior half bristleless, posterior half very regularly bristled.

Male genitalia. Epandrial black spot squarish. Clasper as in Fig. 10B. Hypandrium (Fig. 8I) with 3 processes, the central one short, the outer pair with 2 bristles on outer face. Aedeagus small, blunt at tip and containing non-sclerotised rods.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, iv.1983, light-trap (BMNH).
PARATYPES. **Panama**: 1 ♂, same data as holotype; 1 ♂, Gatun, canopy fogging; 1 ♂, Panama City, end of the Panama Canal, vii.1979, canopy fogging (BMNH).

Poecilominettia foliacea sp. n.

Yellow fly. Body length 3.25 mm

Head yellow, not shining. Fronto-facial angle obtuse. Face profile flat. Ocellar plate yellow. No marks on face or frons. Palps yellow. Labellum heart-shaped with 10 pseudo-tracheal canals on each half. Eyes green. Antennal segments all yellow, 3rd segment slightly oval. Arista with hairs short. Thorax orange-yellow without stripes. Acrosticals in 6–8 irregular rows. Two spots at apex of scutellum continued underneath. Prescutellars reaching beyond half-way to tip of scutellum. Wings slightly darkened with cross-veins very dark. Halteres yellow. Legs yellow; femur 1 with 8 bristles on row curving from postero-dorsally at base to dorsally at apex, 4 bristles posteriorly, 5 long bristles postero-ventrally; femur 2 with 6 short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs antero-ventrally. Abdomen paler than thorax, dingy yellow. No marks on tergites except one faint central line on pregenital segment. Posterior rims of segments pale. Anterior half of each tergite without bristles, posterior half with bristles.

Male genitalia. Epandrium with almost square black spot. Clasper delicate, fanning out from base, with distal edges curled over (Fig. 11D). Hypandrium with 2 processes bearing 2 spines (Fig. 11C). Aedeagus curved, slightly pointed, containing very delicate rods.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, x.1982, light-trap (BMNH).
PARATYPES. 2 ♂, same data but ix.1982, iii.1983 (BMNH).

Poecilominettia folleata sp. n.

Small orange-yellow fly. Body length 3.5 mm.

Head orange-yellow with fronto-facial angle very obtuse. Face profile convex. No marks on face, labrum or cheek. Eyes red. Palps yellow. Labellum slightly elongated, with 10 pseudo-tracheal canals on each side. Antennal segments all yellow. Aristal hairs short. Thorax orange-yellow with one central paler stripe. Halteres yellow. Acrosticals in 8 rows. Prescutellar bristles reaching almost to apex of scutellum. Scutellum with two black spots continued underneath. Wings faintly smoky with veins yellow and cross-veins slightly darkened. Legs paler yellow. Femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 7 irregular bristles posteriorly, and 7 long slender bristles postero-ventrally; femur 2 with 4 fairly long spines on row curving from anteriorly to antero-ventrally, and 1 posterior bristle at apex; femur 3 with 7 proclinate hairs on apical half antero-ventrally. Abdomen considerably paler. Banding effect produced dorsally by clear-cut division of tergites into anterior paler half which is bristle-less, and posterior half which bears bristles.

Male genitalia. Epandrial black spot approximately square. Clasper lying in one plane, without sclerotisation at tip (Fig. 12A). Hypandrium with three processes, central one 3 times longer than outer pair (Fig. 12C). Aedeagus broad, blunt at tip and containing delicate non-sclerotised rods with backwardly pointing curved hooks.

HOLOTYPE. ♂, **Panama**: Barro Colorado Island, xi.1982, light-trap (BMNH).
PARATYPES. 5 ♂, same data but xii.1982, i-iii.1983 (BMNH).

Poecilominettia fornicata sp. n.

Orange-yellow fly. Body length 4.75 mm.

Head orange-yellow, not shining except ocellar and orbital plates. Brown marks on labrum at mouth edge and below eye. Anterior border of frons darkened. Ocellar plate darkened. All antennal segments yellow, segment 3 slightly

elongated (about twice as long as wide). Palps yellow. Labellum heart-shaped, with 11 pseudo-tracheal canals on each half. Thorax bright orange-yellow without stripes. Acrosticals in 8 rows. Prescutellar bristles reaching almost to tip of scutellum. Scutellum not paler, with black apical spots mainly on dorsal surface. All bristles strong. Halteres yellow. Wings smoky yellow with cross-veins strongly darkened. Legs yellow. Femur 1 with 8 bristles on row curved from postero-dorsally at base to dorsally at apex, 7 unusually long bristles posteriorly, and 4 long bristles postero-ventrally; femur 2 with 4 sturdy spines antero-ventrally and 1 posterior bristle at apex; femur 3 with the proclinate hairs present for entire length antero-ventrally. Abdomen slightly paler than thorax. Central marks on 2 pregenital segments. Rims of tergites not darkened posteriorly, but banded appearance evident with anterior third of tergites bristleless and remainder bristled. Ventrally paler with sternites yellow and well bristled.

Male genitalia. Epandrial black spot octagonal. Clasper domed (Fig. 7C) with sclerotised tooth half way down. Hypandrium with 2 fairly long processes directed sideways. Aedeagus rounded at tip and containing rods (Fig. 7F).

Holotype. ♂, **Panama**: Barro Colorado Island, x.1982, light-trap (BMNH).
Paratype. 1 ♂, same data (BMNH).

Poecilominettia fortunae sp. n.

Small yellow fly. Body length 2.25 mm.

Head yellow with square black spot on face at mouth rim. Face profile flat (Fig. 1A). Fronto-facial angle obtuse. Labrum projecting slightly. Antenna entirely yellow with segment 3 slightly oval. Aristal hairs short. Palps yellow. Ocellar plate dark yellow. Labellum slightly elongated. Pseudo-tracheal canals reduced in number, not counted. Thorax more orange-yellow without stripes. Acrosticals in 6 rows. Prescutellars reaching half-way to apex of scutellum. No marks on scutellum. Wings yellowish without markings, veins light yellow. Halteres pale yellow. Legs very pale yellow; femur 1 with 6 long strong bristles on row curving from postero-dorsally at base to dorsally at apex, 5 smaller bristles posteriorly and 4 strong antero-ventrally; femur 2 with 4 short spines anteriorly towards apex and 1 posterior bristle apically; femur 3 with 5 graduated hairs apically antero-ventrally. Abdomen paler yellow with distinct black posterior bands on tergites, and single central black spots on segments 4, 5 and 6 progressively darker. Abdominal bristles delicate.

Male not known.

Holotype. ♀, **Panama**: Fortuna, iii.1977, light-trap (BMNH).

Poecilominettia fumida sp. n.

Dark yellow fly with heavily marked wings (Fig. 1B). Body length 4.25 mm.

Head dark yellow dusted grey. Facial profile flat. Fronto-facial angle obtuse. Antennal segments all darkish yellow, 3rd segment slightly oval and aristal hairs short. Palps dark yellow. Labellum somewhat pointed, with 8 pseudo-tracheal canals on each half. Black spot centrally on face at mouth rim. Ocellar plate dark. Orbital bristles arise from small swellings. Thorax grey dusted over dark yellowish ground with 4 longitudinal stripes, the central pair reaching as far as scutellum, the outer pair as far as suture. Acrosticals in 8 rows. Prescutellar bristles reaching almost as far as apex of scutellum which has two black spots apically and narrow dark border. Wings smoky yellow with dark pattern on costal region and over cross-veins (Fig. 1B). Halteres almost white. Legs dark yellow. Femur 1 with irregular row of 7 bristles dorsally, 3 posteriorly and 7 long postero-ventrally; femur 2 with 5 irregular, stubby spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 6 fine hair-like bristles apically antero-ventrally. Abdomen yellowish with dark posterior borders on each tergite which are continued along lateral edges and central longitudinal dark line. Abdominal sternites with dark lateral borders. Last segment ventrally strongly sclerotised, triangular, forming a rigid structure.

Male not known.

Holotype. ♀, **Panama**: Fortuna, viii.1977, light-trap (BMNH).
Paratype. 1 ♀, same data.

Poecilominettia fungivora sp. n.

Yellow fly with striped thorax. Body length 4.5 mm.

Head yellow with face profile slightly convex in centre. Fronto-facial angle obtuse. Square black spot on face, dark mark at mouth rim and also below eye on cheek. Frons with thin dark line. Ocellar plate dark. Palps yellow. Antennal segment 1 yellow, 2 black, 3 yellow. Hairing on arista long. Thorax yellow with 4 dark stripes – inner pair black as far as suture, then fading, outer pair

fading less than half-way to suture apex. Prescutellars reaching to scutellar apex. All thoracic bristles strong. Wings clear light yellow, crossveins dark. The 2 scutellar black spots large. Acrosticals in 8 irregular rows. Legs pale yellow. Femur 1 with 5 bristles posteriorly, 7 in row curving from postero-dorsally at base to dorsally at apex and 5 long bristles postero-ventrally; femur 2 with 1 strong bristle at apex, 5 sturdy spines antero-ventrally and 1 posterior bristle at apex; femur 3 with row of proclinate hair-like bristles antero-ventrally at apex. Dark mark antero-ventrally at base of tibia 3. Abdomen lighter in colour with no marks except centrally on last 3 tergites. Posterior rims of tergites pale. Sternites pale with sparse hairing.

Male genitalia (Fig. 3D). Epandrial black spot elongate and narrow anteriorly. Hypandrium with 2 hook-tipped processes, clasper small (Fig. 3Db). Aedeagus broad at tip and containing large sclerotised rods (Fig. 3Da).

Female similar to male.

HOLOTYPES. ♂, **Panama**: Barro Colorado Island, x.1982, light-trap (BMNH).
PARATYPES. 2♀, same data but ii.1983.

Poecilominettia gatuna sp. n.

Small yellow fly. Body length 2.5 mm.

Head entirely yellow without marks. Fronto-facial angle almost 180°. Eyes red. Palps yellow. Labellum with pseudo-tracheal canals few but not counted. Antennal segments all yellow. Arista with very short hairs. Thorax entirely yellow. Acrosticals in 6 rows. No marks on scutellum. Prescutellars damaged. Wings clear with veins yellow. Halteres yellow. Legs yellow; femur 1 with 6 bristles on row curved from postero-dorsally at base to dorsally at apex, 5 posteriorly and 5 longer bristles postero-ventrally (other legs damaged). Abdomen entirely yellow.

Male genitalia. Epandrial black spot square. Clasper small, oval, with projecting tooth (Fig. 13C). Hypandrium damaged, but apparently similar to that of *M.sentosa*, only without the 2 central processes (Fig. 6Cc). Aedeagus containing long sclerotised toothed rods (Fig. 13B).

HOLOTYPE. ♂, **Panama:** Gatun end of the Panama Canal, vii.1979, fogging high canopy (BMNH).

Poecilominettia lagenata sp. n.

Yellow fly. Body length 3.75 mm.

Head yellow, not shining except ocellar and orbital plates. No marks apart from brownish patch below eye and darkened rim of labrum. Fronto-facial angle obtuse. Antennal segments all yellow. Aristal hairs short. Palps yellow. Eyes greenish. Labellum slightly elongate heart-shaped, fairly large with 10 pseudo-tracheal canals on each half. Thorax orange-yellow, unstriped. Acrosticals in 8 rows. Prescutellars reaching more than half-way to apex of scutellum. Scutellum pale with two black spots at apex mainly underneath. Halteres yellow. Wings faintly smoky, veins yellow, crossveins not marked. Legs yellow; femur 1 with 8 bristles on row curved from postero-dorsally at base to dorsally at apex, 6 bristles posteriorly and 5 long bristles postero-ventrally; femur 2 with 5 sturdy irregular short spines anteriorly and 1 posterior bristle at apex; femur 3 with 7 proclinate hairs antero-ventrally. All bristles strong. Abdomen yellow, slightly and progressively darker towards tip. Tergites with fine darkened posterior bands. Ring sclerite narrow, complete.

Male genitalia. Epandrial black spot narrow anteriorly, swelling out behind. Clasper broad without protuberances or spines (Fig. 10D). Hypandrium with 2 notched processes and indentation between (Fig. 10Da). Aedeagus broad, containing several sclerotised rods (similar to Fig. 9Ga).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, ii.1983, light-trap (BMNH).
PARATYPES. 2♂, same data.

Poecilominettia legnota sp. n.

Small yellow fly. Body length 3.5 mm.

Head orange-yellow, not shining except ocellar and orbital plates. Face profile flat. Fronto-facial angle obtuse. Eyes green. Brownish mark below eye on cheek and on rim of labrum. Anterior border of frons darkened. Antennal segments all yellow. Aristal hairs short. Palps yellow. Labellum almost rounded, heart-shaped, with 8 pseudo-tracheal canals on each side. Thorax almost orange, unstriped, with acrosticals in 8 rows. Prescutellar bristles reaching almost to tip of scutellum. Scutellum with the two black apical spots mainly beneath. Halteres pale yellow. Wings slightly smoky, veins yellow with crossveins darkened. Legs: femora orange, rest yellow; femur 1 with 7 bristles on row curved from postero-dorsally at base to dorsally at apex, 6 posteriorly and 6 long bristles postero-ventrally; femur 2 with 5 upstanding short sturdy spines anteriorly and 1 posterior bristle at apex; femur 3 with row of 7 long proclinate hairs antero-ventrally at apex. Abdomen orange-yellow dorsally, paler ventrally. Borders of tergites not darkened

or marked. Anterior half of each tergite bristleless, posterior half with bristles, giving a banded appearance.

Male genitalia. Epandrial black spot approximately square. Clasper short, strong, with broad sclerotised border (Fig. 6Ab). Hypandrium with two delicate processes. Aedeagus forming a loose sac containing rods (Fig. 6Ac).

Holotype. ♂, **Panama:** Barro Colorado Island, x.1982, light-trap (BMNH).
Paratypes. 9♂, same data but x.-xi.1982, i., ii.1983 (BMNH).
Material excluded from type series. **Panama:** Barro Colorado Island, vii., xii.1983, light-trap (BMNH).

Poecilominettia lineolata sp. n.

Small yellow fly. Body length 3.5 mm.

Head yellow with no marks on face. Central brown mark on labrum. Ocellar plate darkened. Face profile slightly convex. Frons with central yellow line and darker line on either side. Palps yellow. Antenna all yellow with aristal hairs short. Labellum with pseudo-tracheal canals not counted. Thorax yellow with 4 brownish stripes not reaching beyond second dorso-central bristle. Acrosticals in 8 irregular rows. No spots on scutellum. Prescutellars short, reaching half-way to scutellum apex. All bristles strong. Wings faintly yellowish. Halteres very pale. Legs very pale; femur 1 with 6–7 bristles on row curving from postero-dorsally at base to dorsally at apex, 7 posteriorly, 4 long bristles postero-ventrally; femur 2 with 4 short spines antero-ventrally and 1 posterior bristle at apex; femur 3 with row of proclinate hairs apically postero-ventrally. Abdomen paler than thorax, without markings.

Male genitalia not darkly sclerotised (Fig. 5C). Epandrial black spot rectangular (Fig. 5Ca). Clasper curved, sturdy (Fig. 5Cb). Hypandrium with 2 delicate processes well separated. Aedeagus broad and flat at tip and containing 1 large spine and rows of minute spines (Fig. 5Cc).

Holotype. ♂, **Panama:** Fortuna, iii.1979, light-trap (BMNH).

Poecilominettia maniculata sp. n.

Yellow fly. Body length 3.75 mm.

Head with face profile flat. Fronto-facial angle obtuse. Face with thin darkened rim to mouth edge and brown mark below eye. Ocellar plate darkened. Antennal segments all yellow. Aristal hairs very short. Palps yellow. Labellum with 10 pseudo-tracheal canals on each half. Thorax with 2 thin brown stripes along dorso-central row. Acrosticals in 8 rows. Scutellum not pale, with 2 black spots at tip and beneath. Prescutellars reaching nearly to tip of scutellum. Wings faintly yellow, veins yellow, cross-veins barely darkened. Halteres yellow. All bristles strong. Legs yellow. Femur 1 with 9 bristles on row curving from postero-dorsally at base to dorsally at apex, 7 shorter bristles posteriorly, 6 long bristles antero-ventrally; femur 2 with 6 short stout spines antero-ventrally; femur 3 with 4 proclinate hairs apically antero-ventrally. Abdomen not paler than thorax. Tergites with dark posterior rims.

Male genitalia. Epandrial black spot roughly square with rounded anterior edge. Clasper curved with sclerotised edge, giving a somewhat mitten-like appearance (Fig. 8A). Group of spines at base (Fig. 8Aa). Aedeagus blunt at tip and containing long sclerotised rods. Hypandrium with 2 projections (Fig. 8J).

Holotype. ♂, **Panama:** Barro Colorado Island, ii.1983, light-trap (BMNH).
Paratypes. 3♂, same data but xii.1982, ii., iii.1983 (BMNH).

Poecilominettia membranosa sp. n.

Small yellow fly with black stripes. Body length 2.25 mm.

Head yellow with face profile flat. Fronto-facial angle obtuse. Rectangular black spot on face and dark central line on frons. Ocellar plate dark. Antennal segments 1, 2 black, 3 yellow, slightly longish oval with medium long hairs on arista. Palps black. Labellum with 6 wide pseudo-tracheal canals on each half. Thorax with 4 black stripes, the inner pair faint between suture and scutellum, the outer pair continuing as a border to mesothorax. 2 black stripes diagonally across pleurae. Scutellum with 2 black spots at apex continued below. Scutellum slightly pointed between the 2 black spots. Wings yellowish, veins yellow. Acrosticals in 4 irregular rows. Prescutellars reaching half-way to apex of scutellum. Legs pale yellow; femur 1 with 5 bristles ventrally, 3 shorter posteriorly and 6 postero-dorsally; femur 2 with 4 short stout spines antero-ventrally and 1 posterior bristle apically; femur 3 with graduated row apically of 4 hairs antero-ventrally. Dark spot basally on tibia 3. Abdomen yellow with 3 black marks on each tergite except the first two, composed of a central line flanked by a triangular mark pointing laterally. Paler ventrally with very distinct spots laterally on sternites.

Male genitalia (Fig. 2B). Epandrial black spot

roughly square. Clasper delicate, large lobe-like with slightly curved rim. Hypandrium with low curved area centrally, otherwise flat (Fig. 2D). Aedeagus broad and blunt at tip and containing lightly sclerotised rods.

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, x.1982, light-trap (BMNH).
PARATYPES. 7♂, same data but ix., x., xi.1982 (BMNH).
Material excluded from type series. **Panama:** Barro Colorado Island, x.1982, light-trap; Gatun end of the Panama Canal, vii.1979, fogging the high canopy (BMNH).

Poecilominettia nigriapica sp. n.

Yellow fly with marked wings. Body length 4.5 mm.

Head yellow with labrum edge projecting. Face profile flat, without markings. Fronto-facial angle obtuse. Frons with a pair of brown lines, one on either side of central yellow stripe. Eyes light red. All antennal segments yellow. Aristal hairs short. Palps yellow. Pseudo-tracheal canals of labellum not counted. Thorax orange-yellow on dorsum, paler laterally. No stripes and no marks on scutellum. Acrosticals in 8 rows. Prescutellars damaged. Halteres yellow. Wings dark yellow with cross-veins clouded, broad dark mark on distal third of wing over vein 2 which is continuous with darkened wing tip. Legs yellow. Femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 2 posteriorly and 4 postero-ventrally; femur 2 with 5 strong bristles antero-ventrally and 1 posterior bristle at apex; femur 3 with no distinct proclinate hairs antero-ventrally, black-tipped distally. Abdomen yellow with distinct central line dorsally. Paler ventrally with sternites yellow. Ring sclerite dark.

Male genitalia. Epandrial black spot triangular but not strongly blackened. Clasper small, heavily sclerotised (Fig. 5Bc). Hypandrium with 2 long curled processes (Fig. 5Ba). Aedeagus pointed at tip, with small spines inside (Fig. 5Bb).

HOLOTYPE. ♂, **Panama:** Fortuna, xi.1976, light-trap (BMNH).

Poecilominettia notata sp. n.

Yellow fly. Body length 4 mm.

Head yellow. Face profile flat. Fronto-facial angle obtuse. Anterior transverse dark band on frons (Fig. 8F). Mouth rim narrowly darkened and dark brown area on labrum. Palps yellow. Labellum heart-shaped with 9 pseudo-tracheal canals on each half. Antennal segments all yellow. Aristal hairs short. Ocellar plate yellow. Thorax orange-yellow with central pale stripe, flanked by indeterminate broad brown stripe. Acrosticals in 8 rows. Scutellum with 2 spots at apex and beneath. Prescutellars reaching to tip of scutellum. Wings slightly smoky, veins yellow, cross-veins darkened. Legs yellow. Femur 1 with 5 bristles on row curved from postero-dorsally at base to dorsally at apex, 4 bristles posteriorly and 6 long bristles postero-ventrally; femur 2 with 7 short sturdy spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 5 proclinate hairs apically antero-ventrally. Abdomen paler than thorax with no marks except on genital segments.

Male genitalia (Fig. 8C). Epandrial black spot slightly narrower anteriorly, but not pointed. Clasper broadly blunt at tip (Fig. 8Ca). Group of spines at clasper base (Fig. 8Cd). Aedeagus broad with small inwardly directed spines (Fig. 8Cb). Hypandrium with 2 rounded projections (Fig. 8Cc).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, xi.1982, light-trap (BMNH).

Poecilominettia obtusa sp. n.

Orange-yellow fly. Body length 4.25 mm.

Head orange-yellow. Face unmarked, profile flat, but hollowed out on either side of mid line. Fronto-facial angle very obtuse. Frons with central yellow line and pair of dark lines. Ocellar plate slightly darkened. Eyes bright red. Antenna all yellow. 3rd segment slightly elongated (twice as long as broad). Aristal hairs short. Labellum with reduced number of pseudo-tracheal canals not counted. Thorax orange-yellow with 3 faint narrow stripes. Acrosticals in 8 irregular rows. Sternites darker. Scutellum finely bordered black, without spots at apex. Prescutellars missing in holotype. Wings brownish yellow with darker band along costa almost as deep as level of vein 3. All bristles strong. Legs yellow, femora orange-yellow; femur 1 with 7 bristles posteriorly, 9 on row curving from postero-dorsally at base to dorsally at apex and 6 postero-ventrally; femur 2 with 5 short sturdy spines towards apex and 1 posterior bristle apically; femur 3 with 6 hairs antero-ventrally. Abdomen with darkened posterior borders on tergites, ventrally pale, sternites without marks on borders. Ring sclerite brown, incomplete.

Male genitalia (Fig. 1D). Epandrial black spot elongate, approximately triangular. Clasper with small hooked tip (Fig. 1Dd). Aedeagus curved,

pointed at apex and containing small fine rods (Fig. 1Dc). Hypandrium with 4 processes, well sclerotised (Fig. 1Db).

HOLOTYPE. ♂, **Panama:** Fortuna, i.1976, light-trap (BMNH).

Poecilominettia papillata sp. n.

Small yellow fly. Body length 2.8 mm.

Head yellow, not shining. Face profile flat. Fronto-facial angle obtuse. No mark on face except for dull brown area below eye. Ocellar plate yellow. Palps pale yellow, labellum heart-shaped, with 8 pseudo-tracheal canals on each half. All antennal segments yellow, 3rd segment slightly elongate oval. Aristal hairs short. Thorax more orange-yellow, unstriped. Acrosticals in 6–8 irregular rows. Scutellum with 2 black spots at apex. Prescutellars reaching almost to tip of scutellum. Wings yellowish with veins yellow, cross-veins slightly darkened. Halteres pale yellow. Legs yellow; femur 1 with 4 long bristles postero-ventrally, 4 posteriorly and 6 postero-dorsally; femur 2 with short stout spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs apically antero-ventrally. Abdomen without markings, except on genital segments. Posterior borders of segments yellow.

Male genitalia. Epandrial black spot almost square. Clasper fanning out from base (Fig. 11A). Hypandrium with slight swelling at base of the 2 processes (Fig. 11B). Aedeagus narrow at apex, delicate, containing non-sclerotised threads.

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, iii.1983, light-trap (BMNH).

Poecilominettia parouatia sp. n.

Yellow fly. Body length 4 mm.

Head yellow, not shining except ocellar and orbital plates. No marks except at mouth rim on labrum. Fronto-facial angle obtuse. Face profile flat. Head slightly elongated. All antennal segments yellow, aristal hairs short. Labellum heart-shaped with 9 pseudo-tracheal canals on each side. Palps yellow. Eyes greenish. Thorax strong orange-yellow, no stripes. Acrosticals in 8 irregular rows. Prescutellar bristles reaching almost to tip of scutellum. Scutellum slightly paler with 2 black apical spots mainly beneath. Halteres yellow. Wings very slightly smoky, veins yellow, cross-veins darkened. Legs yellow; femur 1 with 8 bristles on row curving from postero-dorsally at base to dorsally at apex, 6 bristles posteriorly and 6 antero-ventrally; femur 2 with 7 not particularly short spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 5 proclinate hairs apically antero-ventrally. Abdomen paler than thorax. Tergites with distinct dark posterior borders. Tergites with anterior half without bristles, posterior half with bristles, giving a banded effect. Ventral surface pale, sternites yellow. All bristles strong.

Male genitalia. Epandrial black spot approximately square. Clasper sturdy, blunt (Fig. 11I) with spines at base (Fig. 11Ia). Hypandrium with 2 processes which hang downwards (Fig. 11Hb). Aedeagus elongated with column of small spines inside (Fig. 11Ha).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, i.1982, light-trap (BMNH).
PARATYPES. 5♂, same data but xii.1982, i.1983 (BMNH).

Poecilominettia pectinata sp. n.

Orange-yellow fly. Body length 4 mm.

Head yellow, not shining except ocellar and orbital plates. No markings except brownish spot below eye. All antennal segments yellow. Aristal hairs short. Palps yellow. Labellum slightly elongated heart-shaped with 10 pseudo-tracheal canals on each side. Face profile slightly convex. Eyes green. Thorax orange-yellow, unstriped. Acrosticals in 8–10 irregular rows. Prescutellar bristles reaching almost to apex of scutellum. Scutellum paler, especially at tip which is flat between apical bristles. The 2 black spots at scutellum apex mainly beneath. Halteres yellow. Wings smoky with distinct oval clouds over cross-veins which are darkened. Other veins yellow. Legs yellow, femora more orange-yellow; femur 1 with 10 bristles on row curving from postero-dorsally at base to dorsally at apex, 6 smaller and somewhat irregular bristles posteriorly, 6 long bristles on postero-ventral row; femur 2 with 6 sturdy short spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs apically antero-ventrally. All bristles quite strong. Abdomen same colour as thorax, without markings. Posterior borders of tergites not darkened.

Male genitalia. Epandrial black spot square. Clasper pointed with sclerotised tip and protuberance at base with spines (Fig. 9D). Hypandrium with 2 processes with spine on outer face (Fig. 9F). Aedeagus delicate, almost bottle-shaped, no rods or spines within (Fig. 9Fa).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, ii.1983, light-trap (BMNH).
PARATYPES. 8♂, same data but ix.1982, i., ii.1983 (BMNH).

***Poecilominettia pedata* sp. n.**

Yellow fly. Body length 4.5 mm.

Head yellow, not shining except ocellar and orbital plates. Fronto-facial angle very obtuse. Facial profile flat. Eyes red shot green. Antennal segments all yellow. Aristal hairs short. No marks except brown patch below eye and darkened rim of labrum at mouth edge. Palps yellow. Labellum heart-shaped with 10 pseudo-tracheal canals on each half. Thorax yellow without stripes. Acrosticals in 8 rows. Prescutellar bristles reaching as far as apex of scutellum. Scutellum same colour as thorax except at tip which is paler and pointed between bristles. The 2 black spots at apex of scutellum mainly beneath and continuous with fine lateral black borders. Halteres yellow. Wings light yellowish smoky, darker along costa. Cross-veins slightly clouded, clearly marked. Legs yellow; femur 1 with 7 bristles on row curved from postero-dorsally at base to dorsally at apex, 6 bristles posteriorly and 7 long bristles postero-ventrally; femur 2 with 6 short stout spines anteriorly and 1 posterior bristle apically; femur 3 with 5 long, strong, hair-like proclinate bristles antero-ventrally. Abdomen yellow without any central marks. Posterior segments with darkened posterior borders. Ventrally paler with sternites yellow and well bristled.

Male genitalia. Epandrial black spot square. Clasper rounded with a sclerotised tooth (Fig. 7B). Hypandrium with 2 long dangling processes (Fig. 7Ad). Aedeagus very characteristically foot-shaped (Fig. 7Ac), when everted producing sac containing a curved column of small spines (Fig. 7D).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, i.1983, light-trap (BMNH).
PARATYPES. 5♂, same data but ii., iii.1983 (BMNH).
Material excluded from type series. Same locality, x-xii.1982, i.-iii., v.1983 (BMNH).

***Poecilominettia plicata* sp. n.**

Yellow fly. Body length 4 mm.

Head yellow, not shining except orbital and ocellar plates. Fronto-facial angle obtuse. No marks except dark mark below eye on cheek and rim of labrum. Palps yellow. Labellum slightly pointed, heart-shaped with 10 pseudo-tracheal canals on each side. Antennal segments all yellow. Aristal hairs short. Thorax orange-yellow with 3 thin faint narrow stripes. Acrosticals in 10 rows. Prescutellar bristles reaching to just over half-way to apex of scutellum. Scutellum not paler, with 2 black spots at tip continued beneath. Wings slightly smoky, veins yellow with cross-veins darkened. Halteres pale yellow. Legs yellow with femora more orange-yellow; femur 1 with 7 long bristles on row curving from postero-dorsally at base to dorsally at apex, 3 small bristles posteriorly, 5 long bristles antero-ventrally; femur 2 with 6 short sturdy spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 5 long proclinate hairs apically antero-ventrally. Abdomen almost the same colour as thorax. Dorsally no central marks but tergites with distinct dark bands posteriorly. Yellow ventrally.

Male genitalia. Epandrial black spot square. Clasper curved with pointed tip, flange basally (Fig. 11E) and small protuberance with spines at base (Fig. 11Ea). Hypandrium almost flat anteriorly with 3 small rounded processes (Fig. 8H). Aedeagus broad and blunt at tip and containing non-sclerotised straight rods with pointed extremities.

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, iii.1983, light-trap (BMNH).
PARATYPES. 6♂, same data but xii.1982, i., iii., iv.1983 (BMNH).

***Poecilominettia pygmaea* sp. n.**

Small yellow fly. Body length 2.5 mm.

Head yellow with central black spot on face. Face profile flat. Fronto-facial angle obtuse. Palps yellow. Labellum heart-shaped with 8 pseudo-tracheal canals on each half. Eyes red shot green. Antennae all yellow. Aristal hairs short. Thorax orange-yellow. Acrosticals in 6 rows. Prescutellars reaching less than half-way to apex of scutellum. No marks on scutellum. Wings faintly yellowish, veins yellow. Legs pale yellow. Femur 1 with 5 bristles on row curved postero-dorsally at base to dorsally at apex, 4 long bristles postero-ventrally and 5 small bristles posteriorly; femur 2 with 3 fairly strong bristles antero-ventrally and 1 posterior bristle at apex; femur 3 with 6 proclinate hairs at apex antero-ventrally. Abdomen paler than thorax. No marks except on genital segments. Ventrally very pale.

Male genitalia (Fig. 6B). Epandrial black spot chevron-shaped. Clasper lobe-like without sclerotised tooth (Fig. 6Ba). Hypandrium with two processes (Fig. 6Bb). Aedeagus containing very strongly sclerotised sturdy spines (Fig. 6Bc).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, x.1982, light-trap (BMNH).
PARATYPES. 2♂, same data but x., xi.1982 (BMNH).

***Poecilominettia quadriprojecta* sp. n.**

Yellow fly. Body length 3.75 mm.

Head yellow, not shining except ocellar and orbital plates. Fronto-facial angle obtuse. No marks except brownish mark below eye on cheek and darkened rim of labrum. Face profile flat. Eyes green. Palps yellow. Labellum heart-shaped with 9 pseudo-tracheal canals on each side. Antennal segments yellow. Aristal hairs short. Thorax orange-yellow, no stripes. Acrosticals in 8 rows. Prescutellar bristles reaching to apex of scutellum. Scutellum not paler, with the two black spots mainly beneath. Halteres yellow. Wings slightly yellow, veins yellow, cross-veins barely marked. Legs yellow; femur 1 with 6 bristles on row postero-dorsally at base curving to dorsally at apex, 6 short bristles posteriorly and 4 long bristles antero-ventrally; femur 2 with 6 short stout spines antero-ventrally and 1 posterior bristle apically; femur 3 with 4 proclinate hairs apically antero-ventrally. Abdomen uniformly orange-yellow with central marks dorsally on last 2 segments.

Male genitalia. Epandrium with black spot roughly triangular. Clasper sturdy, with blunt tip (Fig. 8D). Hypandrium with 4 processes (Fig. 8G). Aedeagus rounded at tip and containing sclerotised spined rods (Fig. 8E).

Holotype. ♂, **Panama:** Barro Colorado Island, iii.1983, light-trap (BMNH).
Paratypes. 4♂, same data but ii., iii.1983 (BMNH).

***Poecilominettia remata* sp. n.**

Orange-yellow fly. Body length 4 mm. All bristles strong.

Head not shining except ocellar and orbital plates. Face and frons somewhat darkened. Facial profile flat. Eyes green. No marks except brown patch below eye and darkened mouth edge of labrum. Antennal segments all yellow. Aristal hairs short. Palps yellow. Labellum heart-shaped with 9 pseudo-tracheal canals on each half. Thorax strong orange-yellow, unstriped. Acrosticals in 8 rows. Prescutellar bristles reaching almost to apex of scutellum. Scutellum dark orange-yellow with apex pale centrally. Halteres yellow. Wings slightly smoky with costal region yellow. Veins dark, cross-veins darker. Legs orange-yellow; femur 1 with 7 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 bristles posteriorly and 6 long bristles postero-ventrally; femur 2 with 6 sturdy upstanding spines anteriorly and 1 posterior bristle at apex; femur 3 with 7 long proclinate hairs apically antero-ventrally. Abdomen dark yellow, paler ventrally, sternites broad, well bristled. Posterior rims of tergites darkened.

Male genitalia very distinctive (Fig. 8M). Epandrial black spot triangular. Clasper very large, blade-like (Fig. 8Mc). Hypandrium with 2 long processes which hang down (Fig. 8Md). Aedeagus delicate, rounded, containing small spines (Fig. 8Mb).

Holotype. ♂, **Panama:** Barro Colorado Island, iii.1983, light-trap (BMNH).
Paratypes. 9♂, same data but x., xi.1982, i.-iv.1983 (BMNH).

***Poecilominettia semilunata* sp. n.**

Yellow fly. Body length 3.5 mm.

Head yellow. Face profile flat. Fronto-facial angle obtuse. Face with dark mouth rim. No mark on frons. Ocellar plate yellow. Palps yellow. Number of pseudo-tracheal canals on labellum not counted. All antennal segments yellow. Aristal hairs short. Thorax not striped. Acrosticals in 8 rows. Scutellum with 2 black spots continued beneath. Wings faintly yellow with cross-veins only slightly darker. Halteres yellow. Prescutellars reaching almost to tip of scutellum. Scutellum pale. Legs yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 posteriorly, 6 long bristles postero-ventrally; femur 2 with 5 sturdy spines irregularly antero-ventrally, 1 posterior bristle at apex; femur 3 with 5 proclinate hairs antero-ventrally. Abdomen paler yellow than thorax with dark posterior bands on tergites. Ring sclerite very thin, with deep central curve ventrally (Fig. 13Ge).

Male genitalia. No sclerotisation, very delicate. Epandrium with half-moon-shaped black spot. Clasper (Fig. 13Gb) small, narrow, delicate, without sclerotisation. Hypandrium with 2 processes short with curved points (Fig. 7L). Aedeagus larger than clasper, projecting, almost canoe-shaped with upper border outlined dark (Fig. 13Gc).

Holotype. ♂, **Panama:** Barro Colorado Island, iii.1983, light-trap (BMNH).

***Poecilominettia sentosa* sp. n.**

Small yellow fly. Body length 2.25 mm.

Head yellow with central black spot on face. Face and frons dull, ocellar and orbital plates shining. Face profile slightly concave. Fronto-facial angle obtuse. Palps yellow. Labellum heart-shaped with

8 pseudo-tracheal canals on each half. Eyes green. Antenna all yellow with 3rd segment slightly elongate oval. Aristal hairs short. Thorax orange-yellow. Acrosticals in 6 rows. Prescutellars reaching less than half-way to apex of scutellum. Scutellum without spots. All bristles strong. Wings slightly smoky, veins yellow. Legs pale yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 4 bristles posteriorly and 4 long bristles postero-ventrally; femur 2 with 3 short bristles on anterior row and 1 posterior bristle at apex; femur 3 with row of 6 proclinate hairs antero-ventrally. Abdomen paler than thorax with no markings except on genital segments. Ventrally very pale.

Male genitalia very distinctive. Epandrial black spot long oval. Clasper with sclerotised tooth basally. Hypandrium with 2 central processes and 2 outer, the latter bearing a pair of bristles. Aedeagus containing very sturdy, variously shaped spines (Fig. 6C).

Female with 1 black mark dorsally and 1 ventrally at tip of abdomen. Similar to male.

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, xi.1982, light-trap (BMNH).
PARATYPES. 7♂, 11♀, same data but xi.1982, i., iv.1983 (BMNH).
Material excluded from type series. Same data, x., xii.1982, iii.1983 (BMNH).

Poecilominettia sexiprojecta sp. n.

Yellow fly. Body length 4 mm.

Head yellow, not shining except ocellar and orbital plates. No marks except brownish patch below eye and darkened rim to mouth edge of labrum. Fronto-facial angle obtuse. Facial profile slightly convex. Eyes pale green. All antennal segments yellow. Aristal hairs short. Palps yellow. Labellum heart-shaped with 10 pseudo-tracheal canals on each side. Thorax orange-yellow, unstriped. Acrosticals in 8 rows. Prescutellar bristles reaching to apex of scutellum. Scutellum not paler, with 2 black spots at apex. Halteres yellow. Wings faintly yellow, veins yellow, cross-veins barely marked. Legs with femora strong yellow, rest pale; femur 1 with 7 bristles on row curving from postero-dorsally at base to dorsally at apex, 4 posteriorly and 7 long bristles postero-ventrally; femur 2 with 5 short sturdy spines anteriorly and 1 posterior bristle at apex; femur 3 with 5 proclinate hairs apically antero-ventrally. Abdomen yellow with banding effect due to anterior third of tergites paler and quite devoid of bristles and posterior section bristled. Posterior borders not darkened. Ventrally chalky-white with sparse hairing on sternites.

Male genitalia. Epandrial black spot roughly square. Clasper with sclerotised tip and group of spines at base (Fig. 11F). Hypandrium with 6 processes, central pair short, next pair longer, outer pair curved backwards (Fig. 11G). Aedeagus broad, rounded at tip and containing sclerotised rods.

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, iii.1983, light-trap (BMNH).

Poecilominettia silbergliedi sp. n.

Yellow fly with dark stripes on thorax. Body length 3.75 mm.

Head yellow with face profile slightly convex. Dark mark at face rim and on cheek below eye. Eyes red. Frons with thin dark line centrally. Ocellar plate black. Palps yellow. Antennal segments all yellow. Aristal hairs long. Thorax without pleural stripes but with 4 dorsal stripes, inner pair fading after 2nd dorso-central bristle, outer pair fading before suture. Prescutellars reaching almost to apex of scutellum. Scutellar spots very large and even larger beneath. Acrosticals in 6 irregular rows. All bristles strong. Wings hyaline with only cross-veins slightly clouded, veins dark yellowish. Legs very pale, bristles black and strong. Femur 1 with 5 bristles on postero-ventral row, 3 apically posteriorly and 6 on row curving from postero-dorsally at base to dorsally at apex; femur 2 with 4 sturdy spines anteriorly, 1 posteriorly and 1 posterior bristle apically; femur 3 with row of 8 proclinate hairs antero-ventrally apically. Tibia 3 with dark mark basally. Abdomen pale yellow. No dark posterior borders on segments. Dark marks centrally on last 3 segments.

Male genitalia. Epandrial black spot roughly square. Clasper large, delicate, covered with tiny spines (Fig. 2F). Hypandrium with wavy anterior edge (Fig. 2G). Aedeagus flat-tipped, containing rods with curled hooks (Fig. 3B).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, vii.1982, light-trap (BMNH).

Poecilominettia silvicola sp. n.

Small yellow fly. Body length 2 mm.

Head yellow without marks. Face profile flat. Fronto-facial angle obtuse. Palps yellow. Labellum with pseudo-tracheal canals not counted. Antenna all yellow, 3rd segment rounded. Arista bare. Ocellar plate yellow, oval in shape. Thorax yellow without marks. Acrosti-

cals in 6 distinct rows. Prescutellars reaching to apex of scutellum. No spots on scutellum. Wings faintly yellowish, veins yellow. Legs pale yellow; femur 1 with 4–5 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 posteriorly; femur 2 with 5 short spines apically antero-ventrally and 1 posterior bristle apically; femur 3 with row of hairs apically antero-ventrally. Abdomen pale yellow without marks except on genital segments.

Male genitalia. Epandrial black spot square. Clasper sturdy with blunt tip (Fig. 6Da). Hypandrium heavily sclerotised with backward-pointing spine (Fig. 6Db). Aedeagus indented anteriorly, containing sclerotised rods (Fig. 6Dc).

Holotype. ♂, **Panama:** Panama City end of Panama Canal, vii.1979, fogging the high canopy (BMNH).
Paratypes. 2 ♂, same data (BMNH).

Poecilominettia spinosa sp. n.

Deep yellow fly with black stripes. Body length 4 mm.

Head yellow with face profile slightly convex in centre. Fronto-facial angle obtuse. Black spot on face. Black central line on frons. Ocellar plate black. Eyes bright red. Antennal segments 1 and 2 black, 3rd yellow, slightly elongate oval with short hairs. Labellum somewhat elongated with 11 pseudo-tracheal canals on each half. Thorax with 4 black stripes fainter after last posterior dorso-central bristle but strong again over scutellum. Two stripes on pleurae. Black spots at apex of scutellum. Prescutellars reaching just beyond half-way to scutellar apex. Acrosticals in 4 indeterminate rows. Wings yellowish, veins yellow. Legs yellow; femur 1 with 5 bristles antero-ventrally, 5 posteriorly, 4 on row curving from postero-dorsally at base to dorsally at apex; femur 2 with 2 short spines anteriorly and 1 posterior bristle at apex; femur 3 with 1 bristle anteriorly and series of hairs apically antero-ventrally. Tibia 3 with dark mark at base. Abdomen yellow with very dark, distinct banding posteriorly on tergites as well as central longitudinal line and laterally disposed triangular marks. Ventrally very dark borders on sternites. Ring sclerite black.

Male genitalia large. Epandrium with large, roughly square black spot. Clasper with crescent-shaped sclerotised edge equipped with hairs. Hypandrium with 2 processes pointing inwards. Aedeagus with very small teeth within sac (Fig. 1C).

Female similar to male but with 2 large darkened areas bearing spines at tip of abdomen ventrally.

Holotype. ♂, **Panama:** Fortuna, xi.1976, light-trap (BMNH).
Paratypes. 2 ♀, same data but iv., xi.1976 (BMNH).

Poecilominettia trigona sp. n.

Small yellow fly with black stripes. Body length 2.5 mm.

Head yellow with black square spot on face. Dark mark centrally on frons as wide as ocellar plate which is also dark. Antennal segments 1 and 2 black, 3 yellow, slightly elongate oval with aristal hairs of medium length. Palps black. Labellum with pseudo-tracheal canals not counted. Thorax with 4 stripes dorsally, inner pair reaching as far as apex of scutellum, outer pair continuing as a border to mesothorax. Two stripes on pleurae. Acrosticals in 4 rows. Prescutellars reaching half-way to apex of scutellum. Two spots on apex of scutellum continued beneath. Wings hyaline, veins yellowish. Legs pale yellow; femur 1 with 4 bristles ventrally, 6 bristles posteriorly and 6 antero-dorsally; femur 2 with 4 short sturdy spines antero-ventrally and 1 posterior bristle apically; femur 3 with series of 6 proclinate hairs towards apex antero-ventrally. Dark mark at base of tibia 3. Abdomen with longitudinal central stripe flanked by triangular marks whose apices point laterally, on each tergite. Ground colour of abdomen much paler than rest of body. Sternites ventrally very pale.

Male genitalia. Epandrial black spot roughly square. Clasper broad, delicate, bearing strap-like extension at tip (Fig. 2A). Hypandrium not produced into processes but with anterior edge wavy (Fig. 2C). Aedeagus broad with blunt delicate wavy tip and containing stout rods which bear large broad-based spines.

Female similar to male but with 2 black spots at tip of abdomen dorsally.

Holotype. ♂, **Panama:** Barro Colorado Island, x.1982, light-trap (BMNH).
Paratype. 1 ♀, same data (BMNH).

Poecilominettia uncata sp. n.

Yellow fly. Body length 3.25 mm.

Head yellow, not shining except ocellar and orbital plates. Ocellar plate dark yellow. Fronto-facial angle obtuse. Face profile very slightly convex. Eyes red. Palps dark yellow. Antennal segments

all yellow. Aristal hairs short. Labellum slightly pointed with pseudo-tracheal canals not counted. Thorax orange-yellow without stripes. Acrosticals in 8 rows. Prescutellar bristles reaching just over half-way to apex of scutellum. Two black spots at tip of scutellum mainly beneath. Halteres yellow. Wings yellowish, cross-veins not marked. Legs yellow; femur 1 with 6 bristles on row curving from postero-dorsally at base to dorsally at apex, 3 bristles posteriorly and 7 postero-ventrally; femur 2 with 4 short sturdy spines antero-ventrally and 1 posterior bristle at apex; femur 3 with 5 proclinate hairs antero-ventrally. Abdomen orange-yellow. Bristles irregular on tergites. Posterior borders of segments orange-yellow.

Male genitalia. Epandrial black spot roughly square. Clasper rounded, small, with sclerotised hooked tip (Fig. 9B). Hypandrium with 2 curved processes (Fig. 9Ab). Aedeagus large with blunt tip and containing sclerotised rods (Fig. 9Aa).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, i.1983, light-trap (BMNH).

Poecilominettia ungulata sp. n.

Dull yellow fly with grey dusting. Body length 4.5 mm.

Head with fronto-facial angle obtuse. Face with 2 spots connected by V-shaped mark and thin dark line around eye margin. Frons dull yellow, grey-dusted, with 2 dark lines running from antennal bases. Palps yellow. Labellum slightly elongated with 10 pseudo-tracheal canals on each half. Antennal segments all yellow with short hairs on arista. Ocellar plate almost round and dark. Thorax with 2 faint, incomplete brownish stripes on yellowish longitudinal central band. Acrosticals in 8–10 irregular rows. Scutellum without apical spots. Prescutellars extending to just over half-way to tip of scutellum. Thoracic segments outlined finely. Wings yellowish, more strongly so along costal region. Legs pale greyish yellow; femur 1 with 4 bristles antero-ventrally, 3 posteriorly and 6 postero-dorsally; femur 2 with 4 short stout spines antero-dorsally and 1 posterior bristle apically; femur 3 with 5 weak hairs apically antero-ventrally. Abdomen with broad dark posterior bands on tergites and central marks. Sternites pale with no marks. Ring sclerite incomplete (Fig. 12F).

Male genitalia. Epandrial black spot almost square. Clasper large, rounded at tip (Fig. 5F). Hypandrium with 2 processes. Aedeagus with short central spine.

Female similar to male.

HOLOTYPE. ♂, **Panama:** Fortuna, ii.1978, light-trap (BMNH).
PARATYPE. 1 ♀, same data (BMNH).

Poecilominettia vibrata sp. n.

Orange-yellow fly. Body length 4.25 mm.

Head yellow with brownish marks below eye and on labrum. Fronto-facial angle obtuse. Frons and face not shining except orbital and ocellar plates. Palps very pale yellow. Labellum slightly elongated heart-shaped with 9 pseudo-tracheal large canals on each half. Antennal segments all yellow. Aristal hairs short. Eyes green. Thorax not striped. Acrosticals in 8 rows. Scutellum not paler than rest of thorax but with two black spots at apex. Prescutellar bristles reaching nearly to tip of scutellum. Wings yellowish, veins yellow, cross-veins with slight clouds. Halteres yellow. Legs orange-yellow; femur 1 with 8 strong bristles on row curving from postero-dorsally at base to dorsally at apex, 5 bristles posteriorly, 6 postero-ventrally; femur 2 with 6 long fine bristles antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs apically antero-ventrally. Apical bristles on tibia 2 very strong. Abdomen bright yellow, without marks. Tergites clearly divided into anterior half without bristles and posterior half with bristles. Sternites bright yellow.

Male genitalia. Epandrial black spot roughly square. Clasper short, pointed, sclerotised (Fig. 8La). Hypandrium with 3 processes (Fig. 8K). Aedeagus elongated and when extended, the 2 spines project laterally (Fig. 8Lb).

HOLOTYPE. ♂, **Panama:** Barro Colorado Island, v.1983, light-trap (BMNH).
PARATYPES. 5 ♂, same data but iv.1983 (BMNH).

Poecilominettia virgea sp. n.

Small yellow fly with black stripes on thorax. Body length 2.5 mm.

Head yellow. Face profile slightly convex with square black spot. Mouth rim dark. Fronto-facial angle obtuse. Palps dark. Labellum with wide pseudo-tracheal canals not counted. Frons with dark central line. Ocellar plate dark. Antennal segments 1 and 2 black, 3 yellow with aristal hairs of medium length. Thorax with two stripes present over pleurae, 4 stripes on dorsum, outer pair extending as far as suture and fading, inner pair fainter and continuing thus as far as scutellum over which they are again dark, joining 2 scutellar spots at apex. Acrosticals in 6 rows. Prescutellars

reaching as far as half-way to scutellum tip. Wings clear pale yellowish with veins yellow. Legs pale yellow; femur 1 with 10 bristles on row curving from postero-dorsally at base to dorsally at apex, 5 posteriorly and 4 long bristles postero-ventrally; femur 2 with 3 bristles antero-ventrally and 1 posterior bristle at apex; femur 3 with 4 proclinate hairs antero-ventrally. Dark mark on tibia 3 basally. Abdomen with central longitudinal line flanked by large laterally disposed triangular marks on last 3 segments.

Male genitalia. Epandrial black spot elongate rectangular. Clasper with long fine tip (Fig. 4Dc). Hypandrium with curved indentation anteriorly (Fig. 4Fa). Aedeagus containing long rods (Fig. 4Fc) and, at aedeagal base, 2 heavily sclerotised rods as long as aedeagus (Fig. 4Fb).

HOLOTYPE. ♂, **Panama:** Miramar, xii.1979, light-trap (BMNH).

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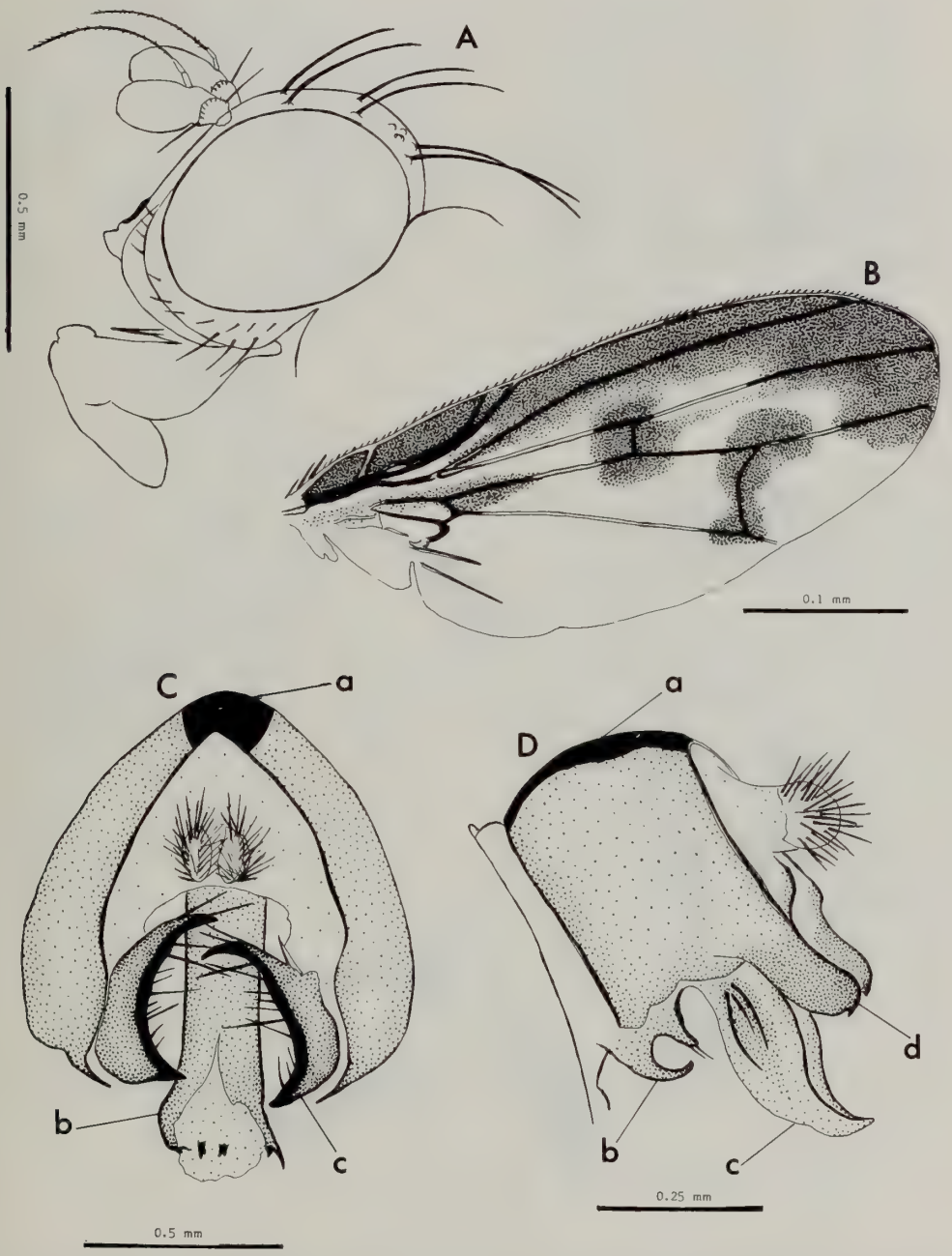

Fig. 1 A, profile of head of *Poecilominettia fortunae* (♀); B, wing of *P. fumida*; C, D, tip of male abdomen of (C) *P. spinosa* (posterior view), a = epandrial black spot, b = aedeagus, c = clasper; (D) *P. obtusa* (lateral view), a = epandrial black spot, b = processes of hypandrium, c = aedeagus, d = clasper.

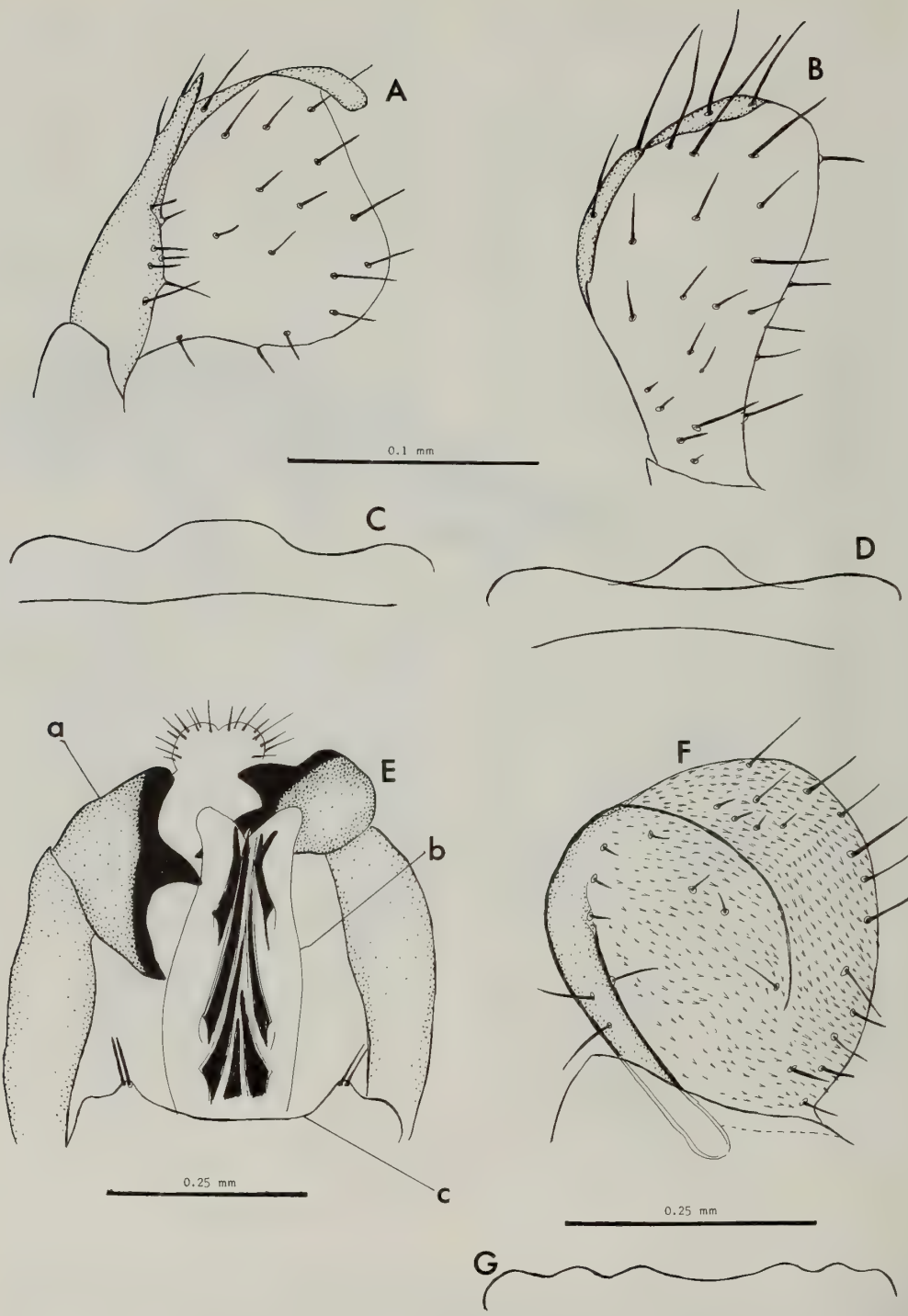

Fig. 2 A, B, clasper of (A) *Poecilominettia trigona*; (B) *P. membranosa*; C, D, hypandrium of (C) *P. trigona*; (D) *P. membranosa*; E, tip of abdomen of male *P. picticornis* (ventral view), a = clasper, b = aedeagus, c = hypandrium; F, clasper of male *P. silbergliedi*; G, hypandrium of *P. silbergliedi*, anterior margin.

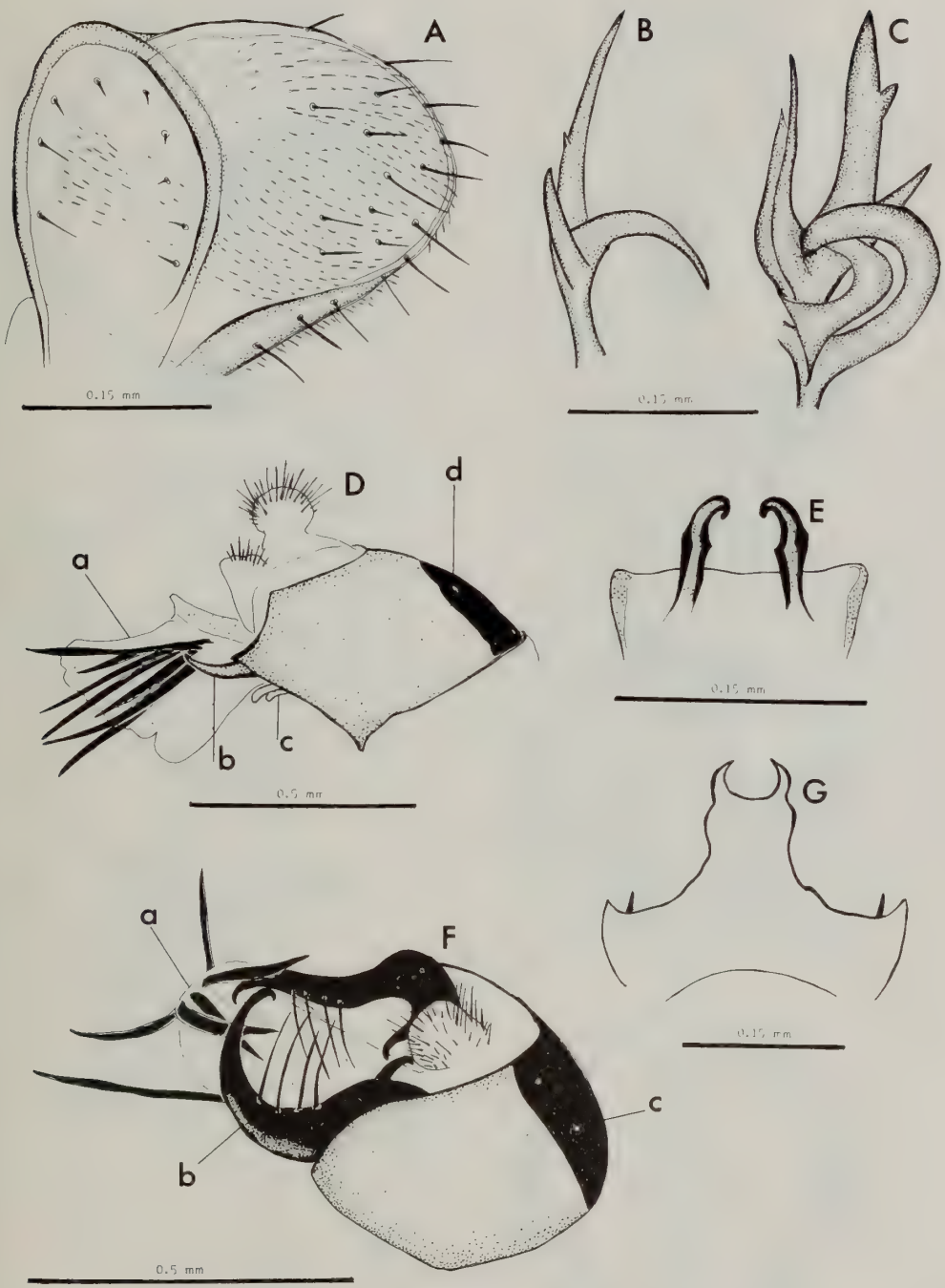

Fig. 3 A, clasper of *Poecilominettia zebroides*; B, C, distal half of one aedeagal rod of (B) *P. silbergliedi*; (C) *P. zebroides*; D, tip of male abdomen of *P. fungivora*, a = aedeagus, b = clasper, c = processes of hypandrium, d = epandrial black spot; E, hypandrium of *P. fungivora*; F, lateral view of tip of male abdomen of *P. falcata*, a = aedeagus, b = clasper, c = epandrial black spot; G, hypandrium of male *P. falcata*.

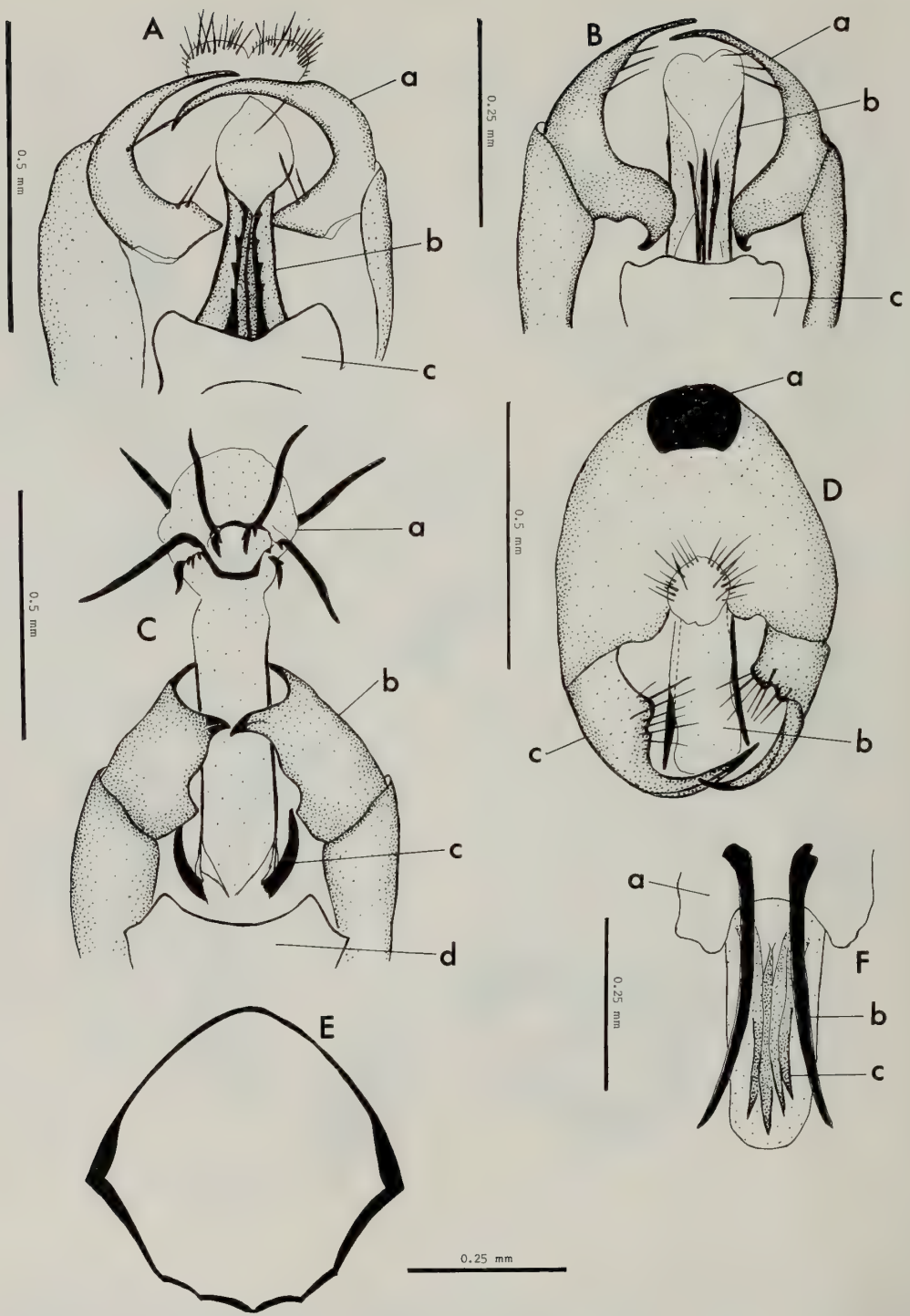

Fig. 4 A-D, tip of male abdomen of (A) *Poecilominettia epacra* (ventral view), a = clasper, b = aedeagus, c = hypandrium; (B) *P. cordata* (ventral view), a = clasper, b = aedeagus, c = hypandrium; (C) *P. cornuta* (dorsal view), a = aedeagus extended, b = clasper, c = rods at aedeagus base, d = hypandrium; (D) *P. virgea*, a = epandrial black spot, b = aedeagus, c = clasper; E, ring sclerite of *P. sexiprojecta*; F, ventral view of aedeagus and rods of *P. virgea*, a = hypandrium, b = sclerotised rods, c = aedeagus.

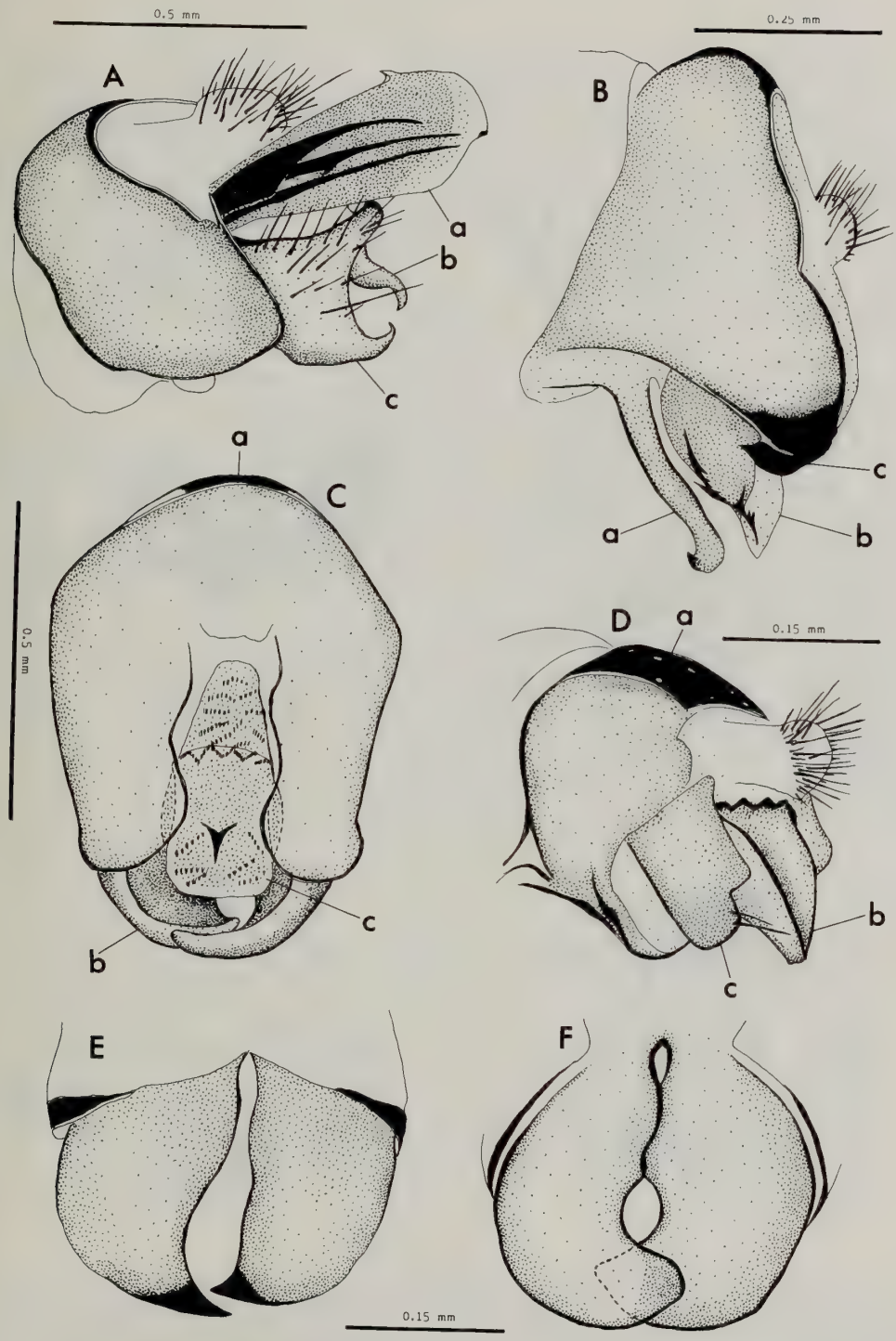

Fig. 5 A-D, tip of male abdomen of (A) *Homoeominettia woldae* (lateral view), a = aedeagus, b = process of hypandrium, c = clasper; (B) *Poecilominettia nigriapica* (lateral view), a = process of hypandrium, b = aedeagus, c = clasper; (C) *P. lineolata* (ventral view), a = epandrial black spot, b = clasper, c = aedeagus; (D) *P. circumtexta* (lateral view), a = epandrial black spot, b = aedeagus, c = clasper; E, F, clasper of (E) *P. circularis*; (F) *P. ungulata*.

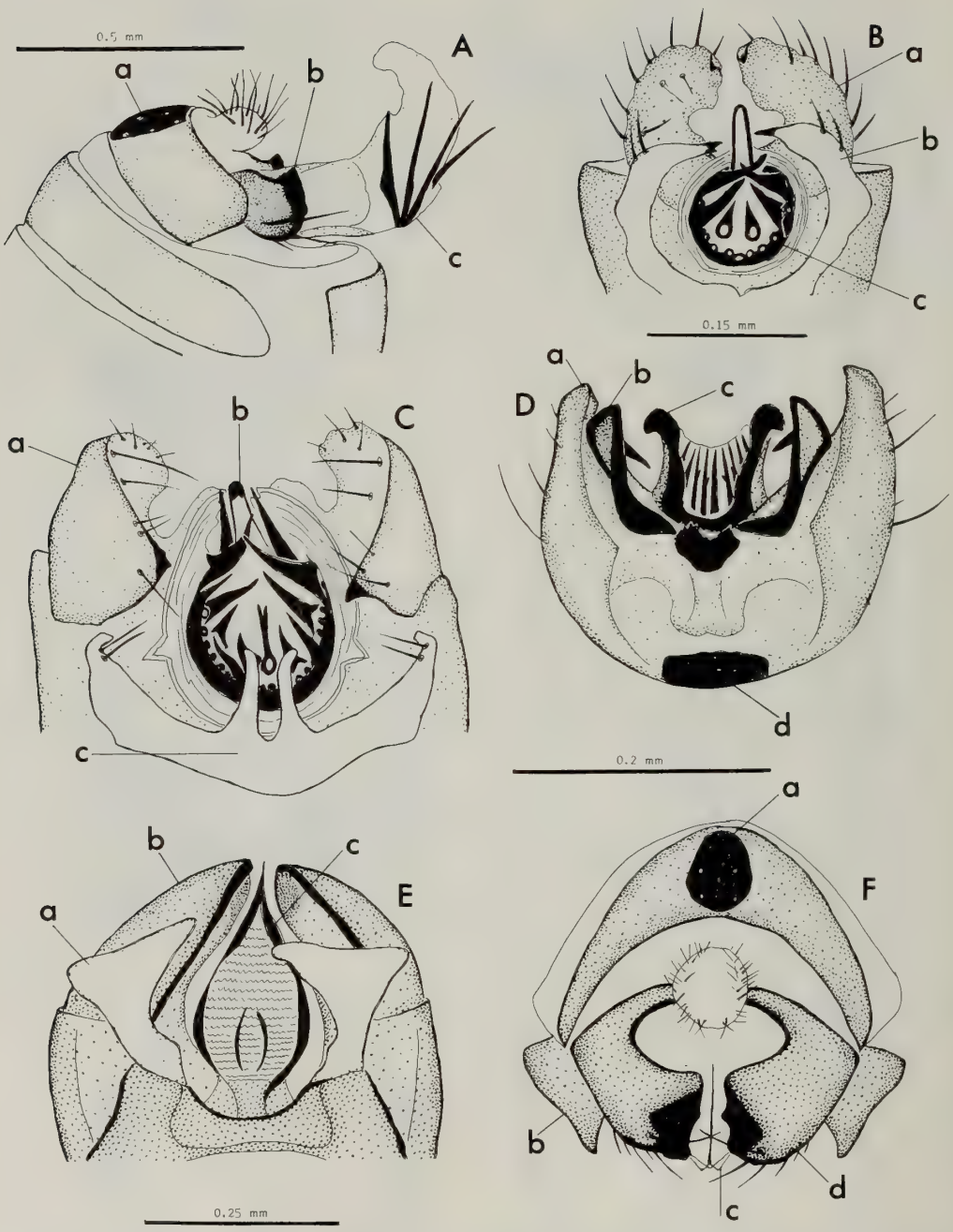

Fig. 6 A-F, tip of male abdomen of (A) *Poecilominettia legnota* (lateral view), a = epandrial black spot, b = clasper, c = aedeagus and rods; (B) *P. pygmaea* (ventral view), a = clasper, b = process of hypandrium, c = aedeagus and rods; (C) *P. sentosa* (ventral view), a = clasper, b = aedeagus and rods, c = hypandrium; (D) *P. silvicola* (ventral view), a = clasper, b = process of hypandrium, c = aedeagus, d = epandrial black spot; (E) *P. enormis* (ventral view), a = process of hypandrium, b = clasper, c = aedeagus; (F) *P. enormis* (dorsal view), a = epandrial black spot, b = process of hypandrium, c = aedeagus, d = clasper.

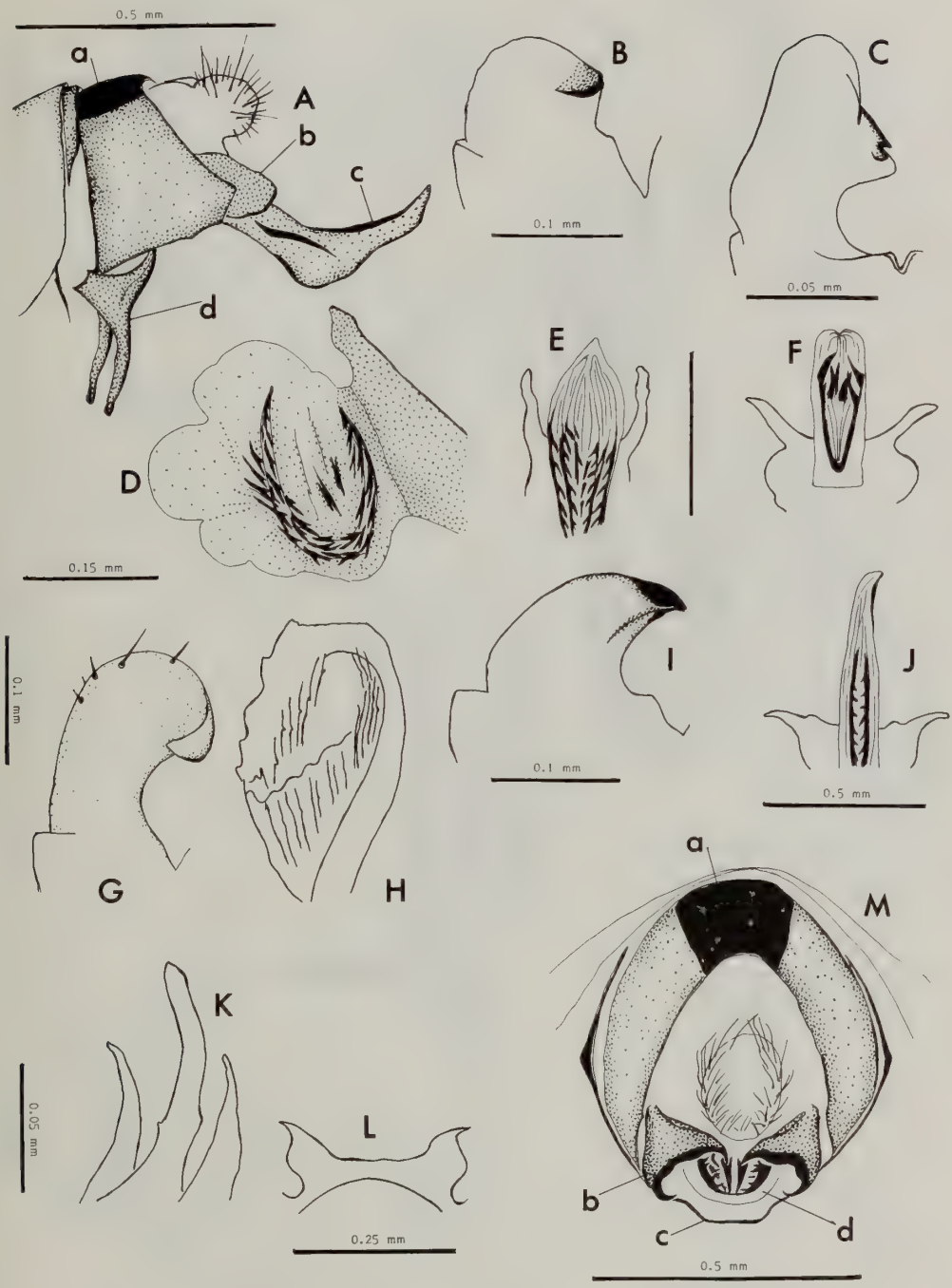

Fig. 7 A, tip of male abdomen of *Poecilominettia pedata* (lateral view), a = epandrial black spot, b = clasper, c = aedeagus, d = processes of hypandrium; B, C, clasper of (B) *P. pedata*; (C) *P. fornicata*; D, extended aedeagus of *P. pedata*; E, aedeagus and processes of hypandrium of *P. pedata*; F, aedeagus and hypandrium of *P. fornicata*; G, clasper of *P. fimbriata*; H, extended aedeagus of *P. fimbriata*; I, clasper of *P. vibrata*; J, aedeagus and processes of hypandrium of *P. vibrata*; K, processes of hypandrium of *P. fimbriata*; L, hypandrium of *P. semilunata*; M, tip of male abdomen of *P. effossa*, a = epandrial black spot, b = clasper, c = ring sclerite, d = aedeagus.

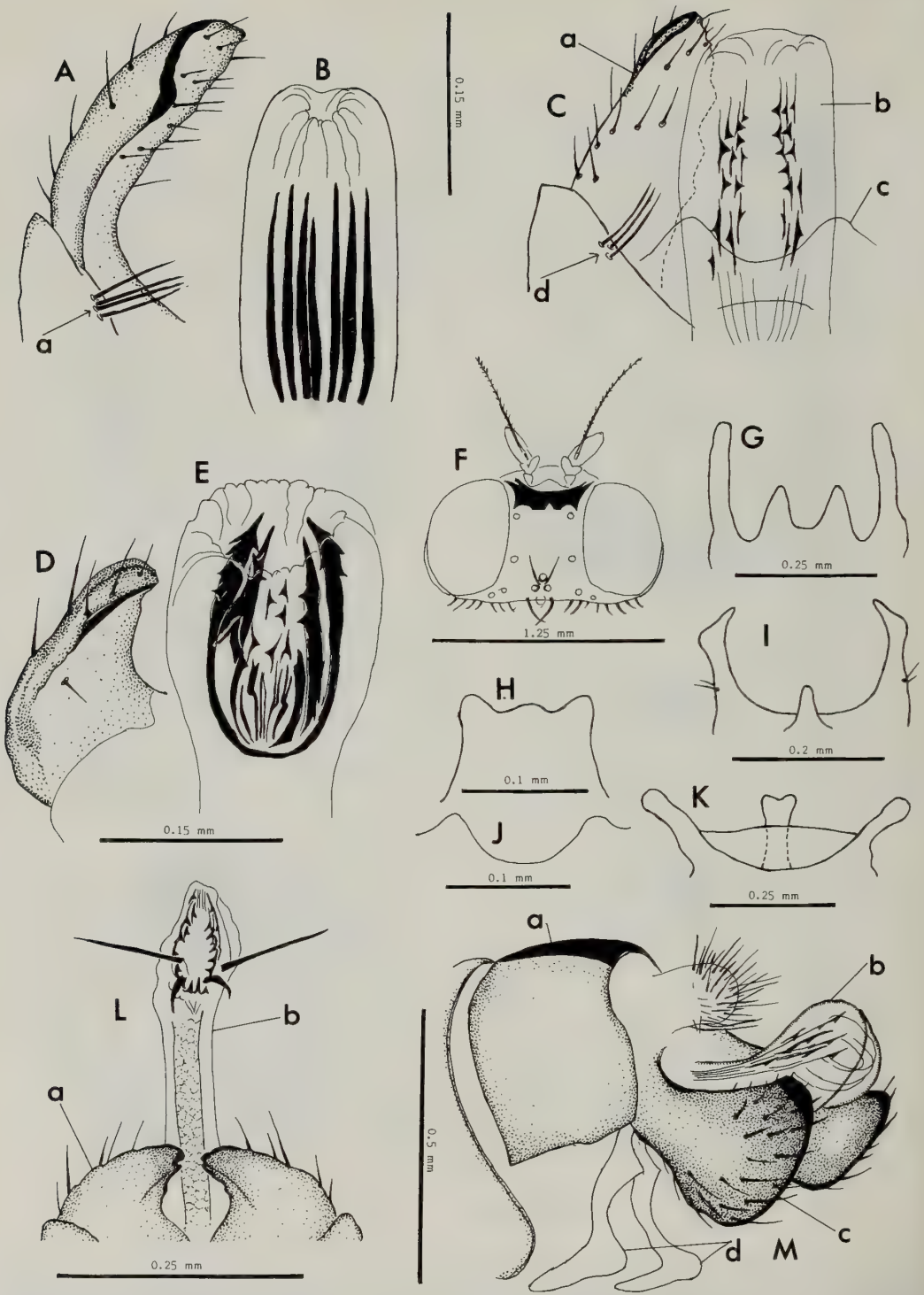

Fig. 8 A, clasper of *Poecilominettia maniculata*, a = group of spines; B, aedeagus of *P. maniculata*; C, *P. notata* (ventral view), a = clasper, b = aedeagus, c = hypandrium, d = spines; D, clasper of *P. quadriprojecta*; E, aedeagus of *P. quadriprojecta*; F, head of *P. notata*; G-K, hypandrium of (G) *P. quadriprojecta*; (H) *P. plicata*; (I) *P. flavescens*; (J) *P. maniculata*; (K) *P. vibrata*; L, M, tip of male abdomen of (L) *P. vibrata*, a = clasper, b = aedeagus; (M) *P. remata*, a = epandrial black spot, b = aedeagus, c = clasper, d = processes of hypandrium (lateral view).

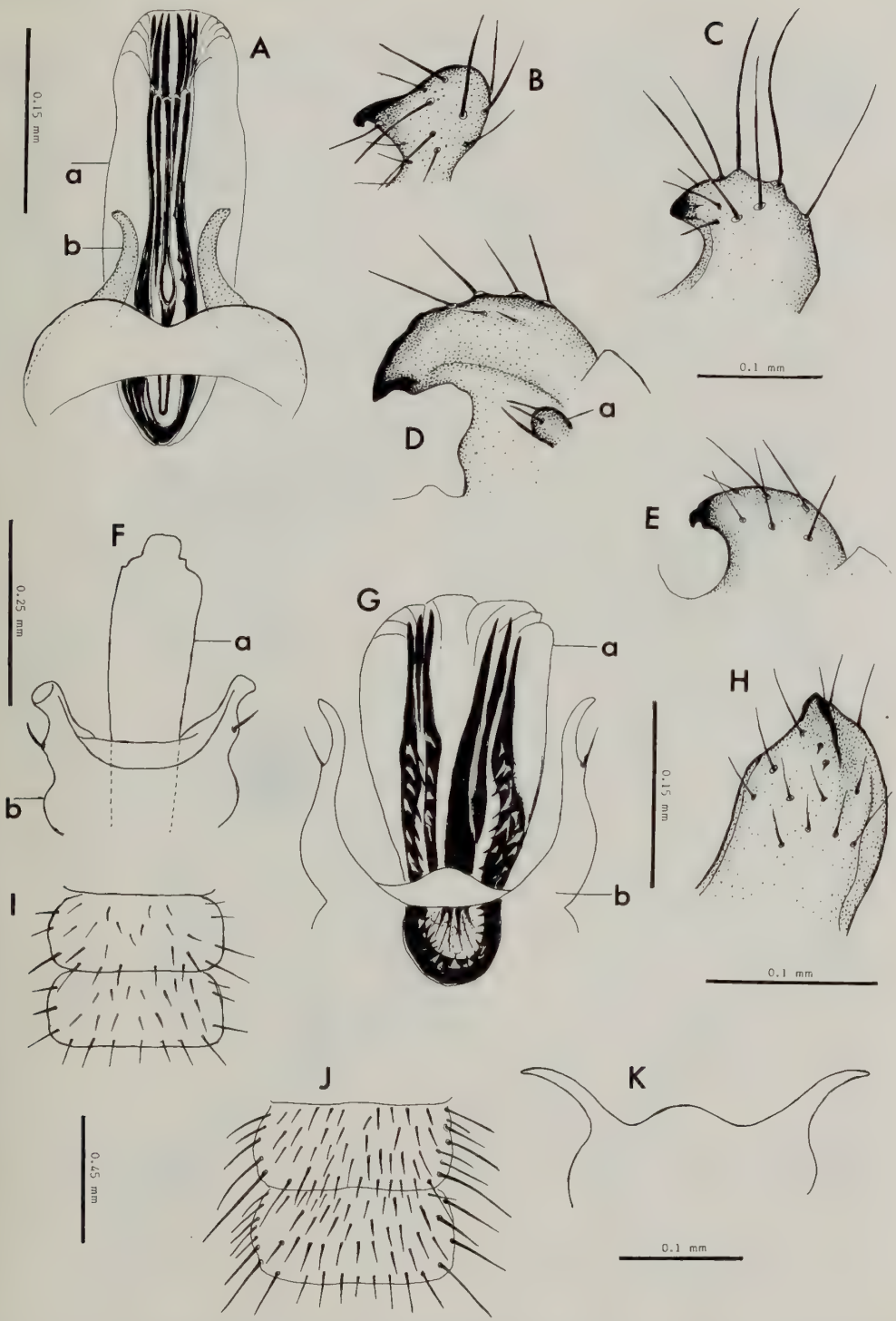

Fig. 9 A, aedeagus and hypandrium of *Poecilominettia uncata*, a = aedeagus, b = hypandrial process; B-E, clasper of (B) *P. uncata*; (C) *P. calva*; (D) *P. pectinata*, a = protuberance and spines; (E) *P. curvata*; F, G, hypandrium and aedeagus of (F) *P. pectinata*, a = aedeagus, b = hypandrium; (G) *P. calva*, a = aedeagus, b = process of hypandrium; H, clasper of *P. erymna*; I, J, abdominal sternites of (I) *P. calva*; (J) *P. pectinata*; K, hypandrium of *P. curvata*.

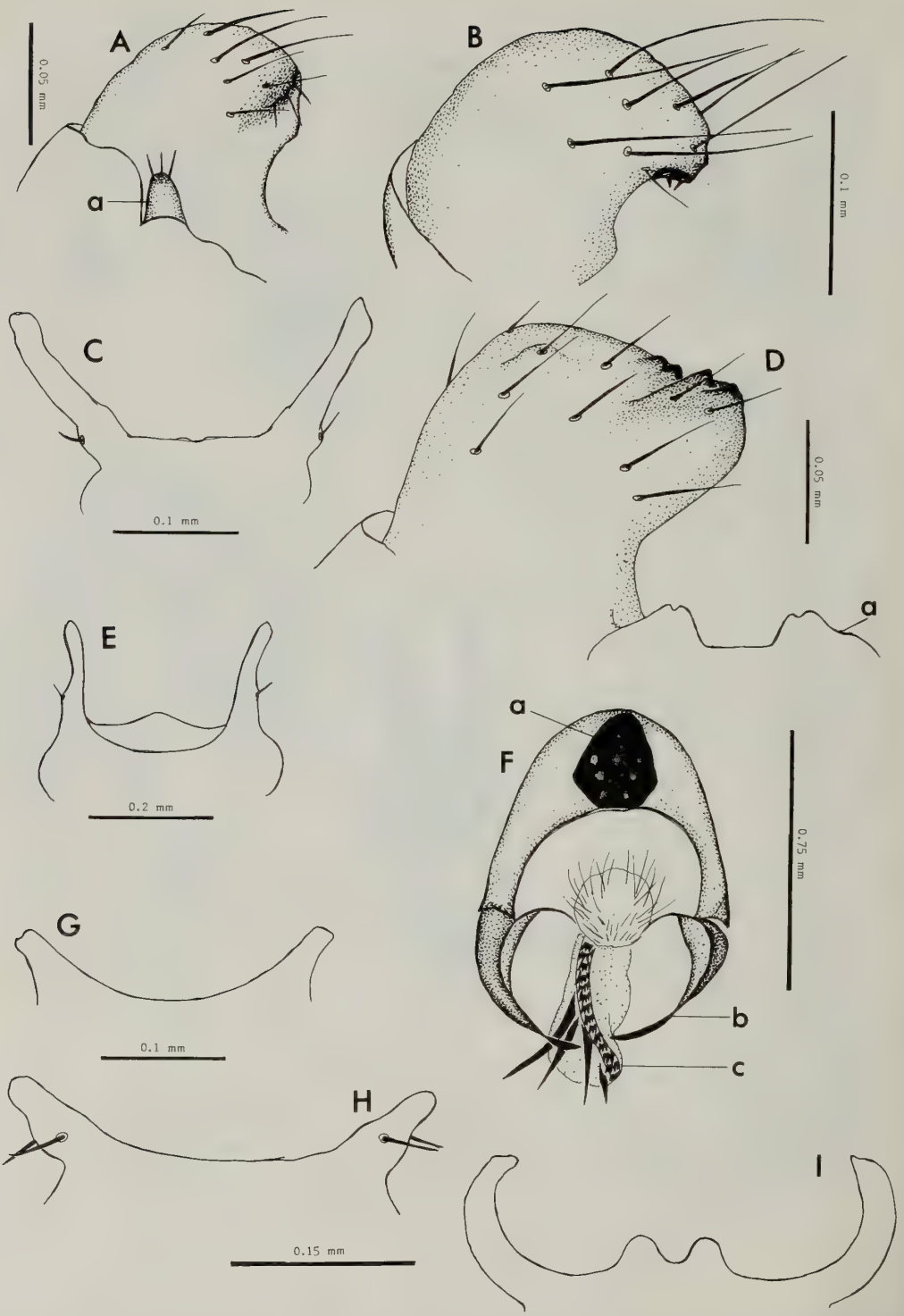

Fig. 10 A, B, clasper of (A) *Poecilominettia biprojecta*, a = protuberance and spines; (B) *P. flavescens*; C, hypandrium of *P. biprojecta*; D, clasper and hypandrium of *P. lagenata*, a = hypandrium; E, hypandrium of *P. flavescens*; F, tip of male abdomen of *P. chelata* (posterior view), a = epandrial black spot, b = clasper, c = aedeagus; G-I, hypandrium of (G) *P. chelata*; (H) *P. aurita*; (I) *P. erymna*.

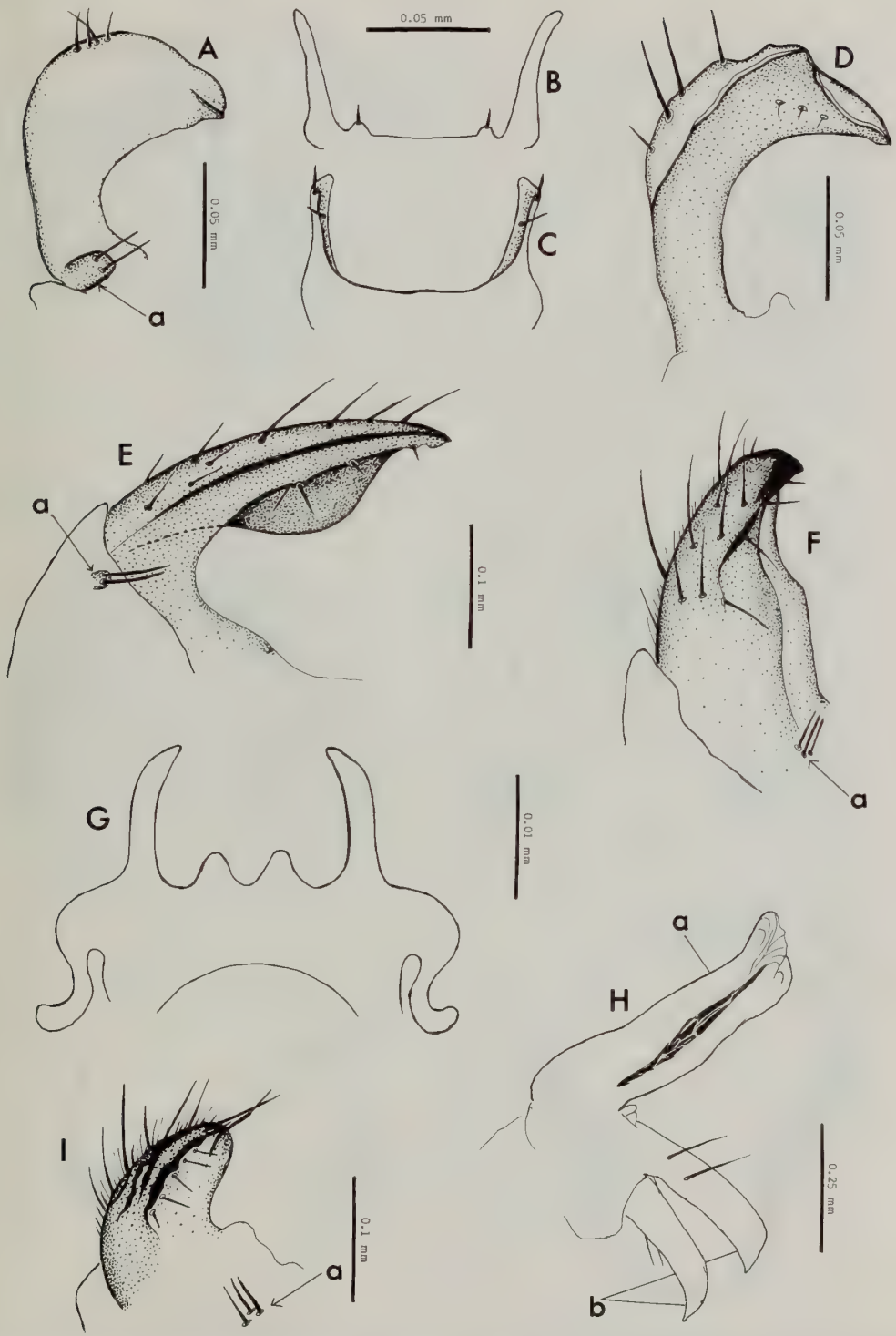

Fig. 11 A, clasper of *Poecilominettia papillata*, a = protuberance and spines; B, C, hypandrium of (B) *P. papillata*; (C) *P. foliacea*; D-F, clasper of (D) *P. foliacea*; (E) *P. plicata*, a = protuberance and spines; (F) *P. sexiprojecta*, a = spines; G, hypandrium of *P. sexiprojecta*; H, aedeagus and hypandrium of *P. parouatia* (lateral view), a = aedeagus, b = processes of hypandrium; I, clasper of *P. parouatia*, a = spines.

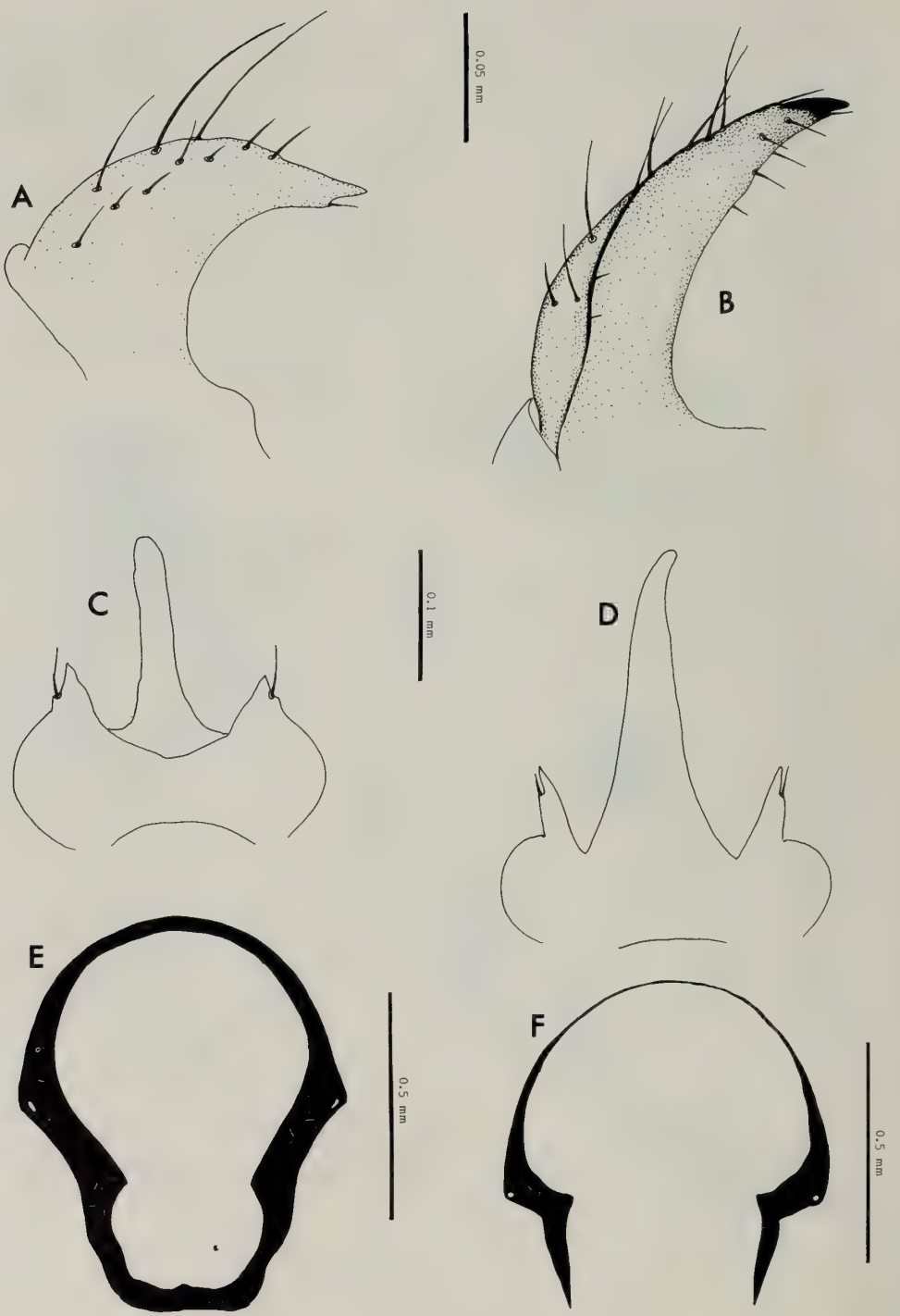

Fig. 12 A, B, clasper of (A) *Poecilominettia folleata*; (B) *P. acuta*; C, D, hypandrium of (C) *P. folleata*; (D) *P. acuta*; E, F, ring sclerite of (E) *P. circularis*; (F) *P. ungulata*.

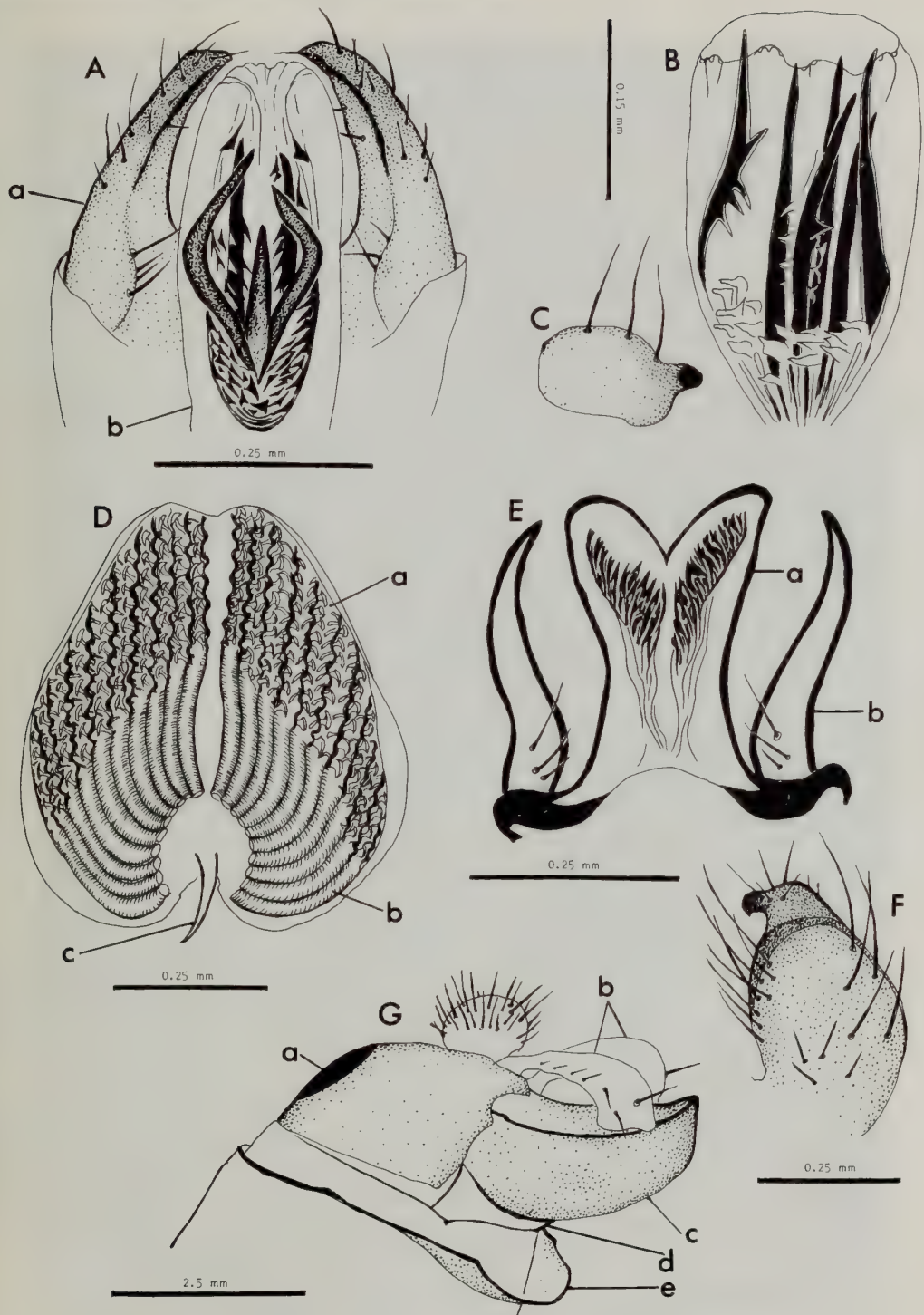

Fig. 13 A, clasper and aedeagus of *Poecilominettia aurita*, a = clasper, b = aedeagus; B, aedeagus of *P. gatuna*; C, clasper of *P. gatuna*; D, labellum of *P. pectinata*, a = modified zone, b = pseudo-tracheal canals, c = beak; E, aedeagus and processes of hypandrium of *Floriminettia coronata*, a = aedeagus, b = process of hypandrium; F, clasper of *F. coronata*; G, tip of male abdomen of *Poecilominettia semilunata*, a = epandrial black spot, b = claspers, c = aedeagus, d = hypandrium, e = ring sclerite.

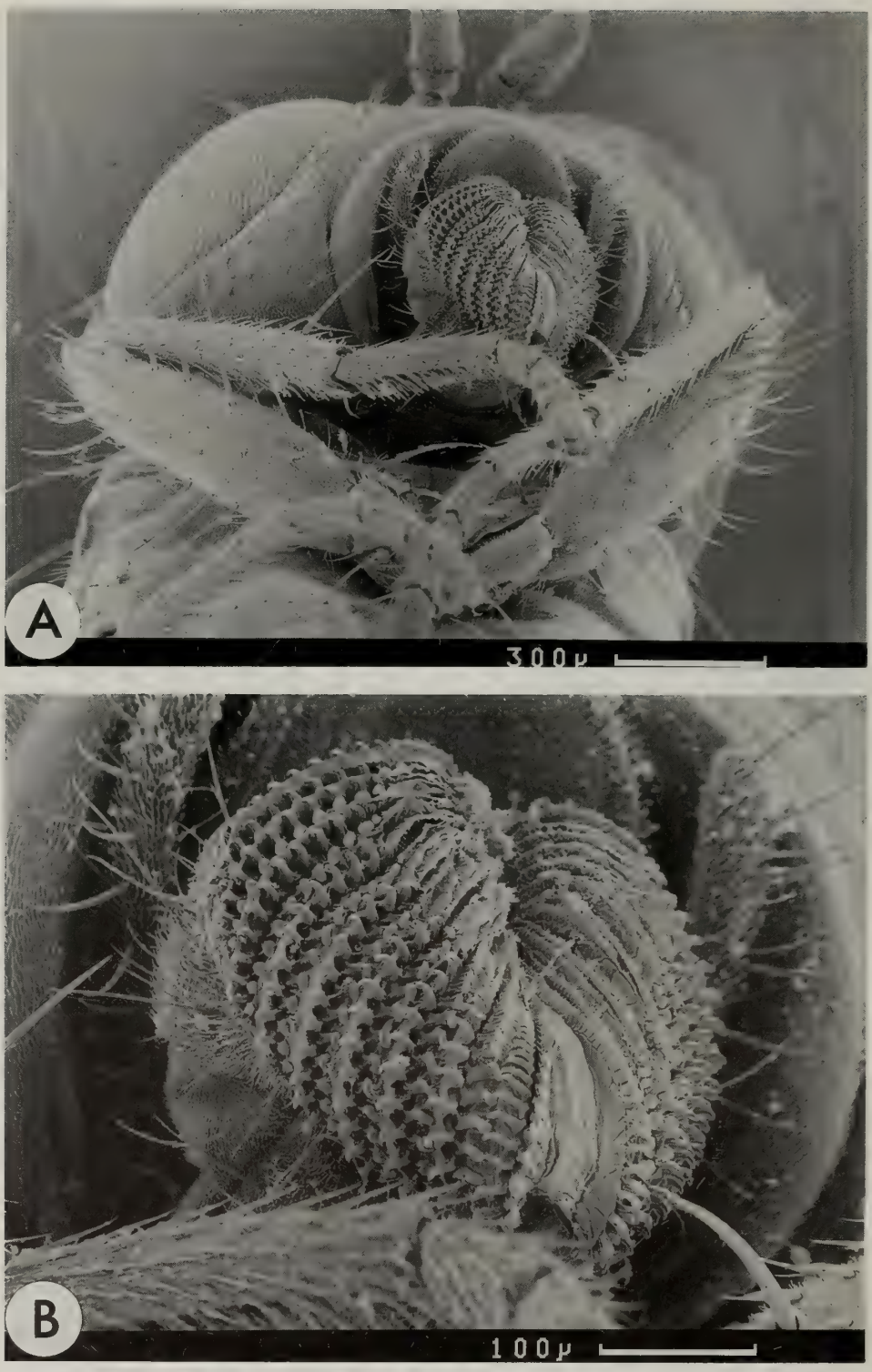

Fig. 14 A, head of *Poecilominettia effossa*, labellum fully extended; B, labellum enlarged to show structures on distal half.

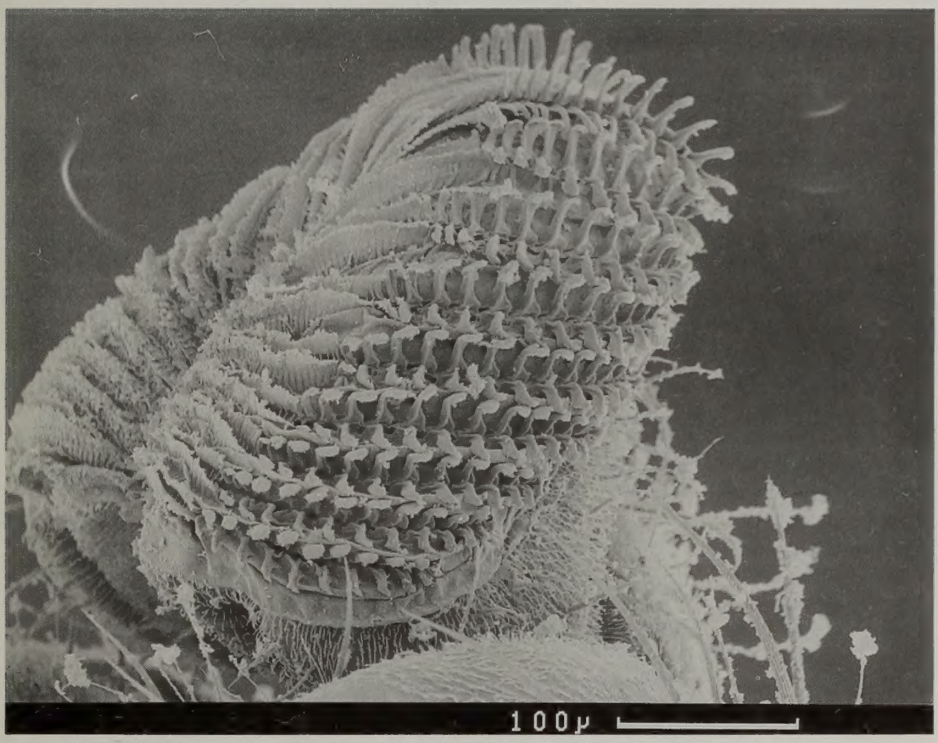

Fig. 15 Labellum of *Poecilominettia effossa* in lateral view.

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